JULY

MODERN PACKAGING

1943



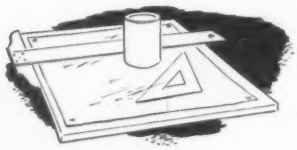


Canco's New Powder Container—for the Home Front

. . . here is our newest "wartime" package for talcum-dusting—dental and other powders.

IT IS MADE on existing package-making machinery and is filled by existing package-filling equipment.

This all-fibre talcum can is one of many new substitute containers which Canco has evolved to meet war-time restrictions. Through the use of these, war-time packaging and distribution



problems for many products can be solved.

As you well know, restrictions on materials have created some mighty tough problems for us all. Indeed, there



are certain demands which cannot be met immediately with the limited materials available. But, where problems call for technical skill and adaptations, Canco is coming forward with ingenious and highly practical suggestions and substitutions.

Yes indeed, Canco technicians and research men are constantly working for you. We at Canco accept it as our obligation to do our utmost to come through with suitable solutions to present packaging difficulties.

This work, of course, must and will proceed without interfering in any way with the large and important contributions we are making daily to the war effort.

AMERICAN CAN COMPANY

230 Park Avenue, New York, N.Y.

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Dependability! Behind every successful organization and product will be found this one dominant idea. Once the public discovers that a product is dependable; they accord it respectful patronage which some manufacturers find difficult to explain. Good quality in a product and good character in an organization are beyond all competition. *But dependability is dependent!* Unless a packaged product is delivered to the consumer in exact quantity and original purity, the manufacturer stands to lose not only the sale of the passing moment, but future good will of the consumer as well. Depend upon the Phoenix C T Cap to do the things it is designed to do—deliver the contents of a package safely to the user and protect the manufacturer's good name. Convenient to apply, remove and re-apply; decorative, yet economical; simple in construction, precision made, standard; uniform in fit and appearance; adaptable to a wide variety of products, packages and methods . . . *dependable!*

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VOLUME 16 — JULY 1943 — NUMBER 11

COVER

For its July flag cover, Modern Packaging presents, through the courtesy of the United States Marine Corps, this reproduction of an oil painting symbolic of the spirit of America's fighting men. Beside the American flag is the flag of the Marine Corps with its famous emblem—the globe, the fierce eagle and anchor—and with its steadfast motto, *Semper fidelis*—always faithful. We shall be happy to make copies without the masthead and suitable for framing available to subscribers on request.

Member of Audit Bureau of Circulation

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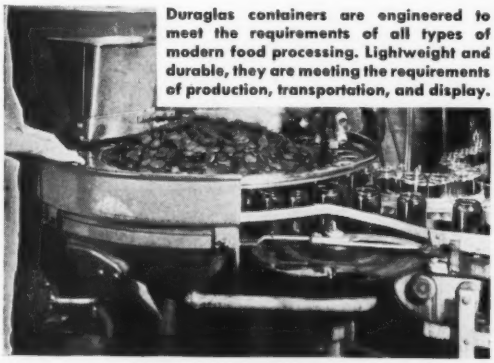
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Tomorrow's Food Packaging

IS IN HER HANDS





Duraglas containers are engineered to meet the requirements of all types of modern food processing. Lightweight and durable, they are meeting the requirements of production, transportation, and display.

Mrs. America demonstrates by her purchases that she recognizes the advantages of fruits and vegetables packed in Duraglas containers.

Duraglas containers offer her visibility—trusted guide to better buying. Duraglas containers offer convenience in opening, serving and storing.

Mrs. America's preference is building a new pattern for *future* food buying. That's why processors, marketing fruits and vegetables in Duraglas packages, are ready for tomorrow . . . *today!*

OWENS-ILLINOIS
GLASS COMPANY TOLEDO, OHIO

DEVELOPERS OF Duraglas CONTAINERS

RESCUE

begins with a paper 'chute!



There they are – food, water, medicines – the indispensable aids that turn the balance back toward life again.

The 'chute that floats them down so accurately isn't silk, or nylon, or rayon. It's paper.

It's paper made resilient enough to withstand the sharp impact of opening at plane speed.

It's paper made with a high wet-strength to resist rain and fog.

It's paper made from a special stock so strong that only one and a half pounds of it will safely lower 25 pounds of lifesaving essentials.

It's paper so skillfully folded and designed that the 'chute opens in from one to three seconds after release.

But this is just one of the thousands of roles, major and minor, that paper is playing in this war.

From the "Daily Dope Sheet" of a naval station to the laminated paper guard ring on a big bomb, paper is working overtime and all the time. At Oxford we know that hundreds more new jobs for paper are just over the horizon.

Making a thousand miles of paper a day, as we do, we are in a position to observe the upward swing of paper, to watch new needs for paper arise, to see new uses for paper appear.

We do not make paper parachutes. Our specialty is the manufacture of fine printing paper, but we are also vitally interested in the development of moisture-, vapor- and grease-proof papers. We are conducting research in high-wet strength papers, in laminated and heat sealing papers and other developments that will help paper to help win this war.

In the meantime, Oxford merchants and Oxford salesmen are at your service with quality papers for many uses.

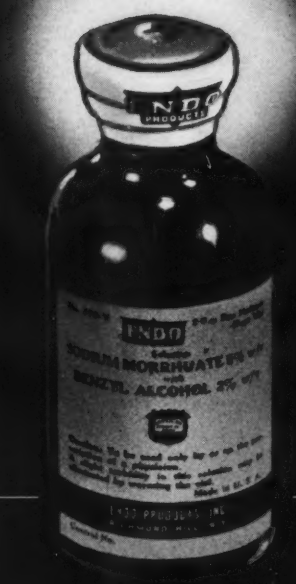
OXFORD PAPER COMPANY

230 Park Avenue, New York 17, N. Y.

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Mills at Rumford, Maine & West Carrollton, Ohio

Western Sales Office: 35 E. Wacker Drive, Chicago, Illinois



Injectable Solutions protected by

CEL-O-SEAL BANDS



Many injectable solutions come in vials with rubber closures through which needles may be inserted without removing stoppers. When needles are withdrawn, retraction of the rubber seals the closure. CEL-O-SEAL cellulose bands guard the solutions by securely holding rubber stoppers in place.

CEL-O-SEAL bands forestall tampering. They protect the purity of the product and guard against entrance of foreign matter, evaporation or leakage. This added protection assures maker and user that the product retains original strength and quality.

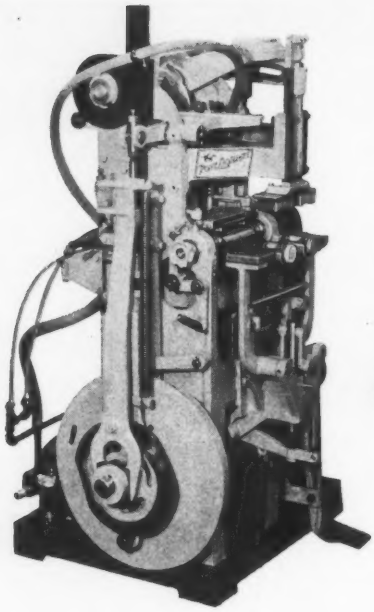
Bands displaying trade marks add to the distinction of the package and serve as a second label. Write E. I. du Pont de Nemours & Co. (Inc.), Cel-O-Seal Section, Empire State Bldg., New York City.

Also sold by Armstrong Cork Co., Glass & Closure Div., Lancaster, Pa. — I. F. Schnier Co., 683 Bryant St., San Francisco, Calif.

DU PONT
REG. U.S. PAT. OFF.

CEL-O-SEAL BANDS
TRADE MARK

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY



A-1-K
(or better)

This Machine helps in METAL SAVING by lower cost of labeling GLASS-PACKS

FOODS
DRUGS

FOOD PACKERS AND DRUG MANUFACTURERS LIKE THE LABELRITE ADVANTAGES—

Labelrites are being provided for manufacturers converting to "Glass-packs" on priorities of A-1-K or better. You don't *need* "skilled" operators to maintain a speed of 50 or more per minute.

- PERFECT REGISTER
- NO WIPING OF CONTAINERS
- "PETTY-CASH" CHANGE PARTS
- LEAST TIME FOR CHANGING

Labelrites can be supplied for labeling 2-at-a-time, like the one shown above, on most sizes of jars.

Get FACTS—and you'll get Labelrites!

NEW JERSEY MACHINE CORPORATION

1600 Willow Avenue . . . . . Hoboken, N. J.

Chicago Office: 325 W. Huron Street



It makes good sense. The contents of such jugs are usually expensive. So the jugs should be strong, sturdy and high in quality to stand up under the production and shipping hazards they must take to get your product where it's going safely.

Anchor Hocking jugs fill this bill, for every phase of their manufacture gets special attention, is constantly and closely watched and checked to assure you the highest in uniform strength and quality.

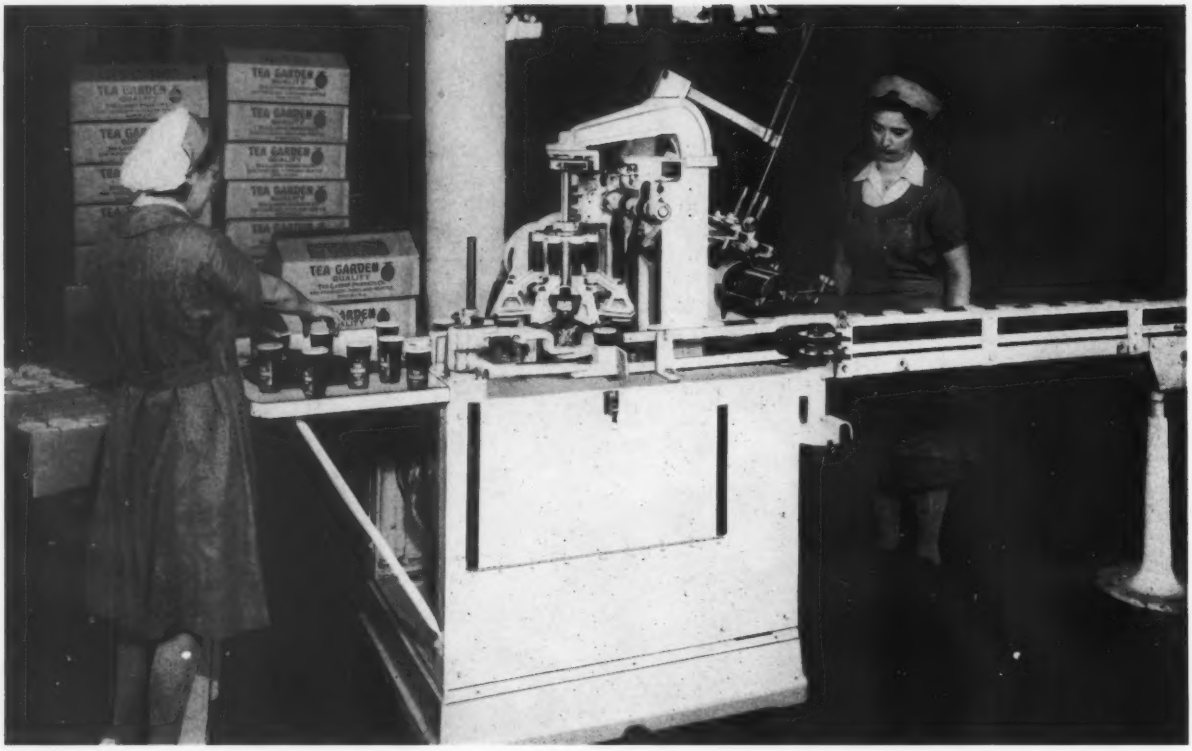
To provide dependable, airtight protection against leakage and evaporation Anchor Hocking makes two styles of metal caps, the ever popular C.T., the more dressy NKCT (no knurl), and for those products whose chemical composition requires special protection, Anchor Molded Caps.

H. Q. MILLS, one of Anchor Hocking's ablest and most popular men, has been a member of the Anchor Hocking family for 36 years.

ANCHOR HOCKING
GLASS & CAPS
ANCHOR HOCKING GLASS CORPORATION · LANCASTER, OHIO







HOW TEA GARDEN *Preserves* GOOD LABELING

Here is the recipe. Take all shapes and sizes of TEA GARDEN jars and bottles and put them through a WORLD Automatic UNI-TURRET Labeler as shown above. It adds clean, accurately positioned, firmly affixed labels. Its tested and proved ingredients include compact, efficient, sturdy construction and smooth, swift, dependable operation day in and day out. It *preserves* good labeling and *conserves* time, labor and money.

"The proof of the pudding is in the eating". Those now using WORLD Automatic and Semi-Automatic Labelers provide the most authoritative basis for preserving your confidence in the fact that you will continue to get "the *best* labelers in the WORLD."



Some of the many famous TEA GARDEN products labeled by the WORLD Uni-Turret. Note the wide variety of container and label sizes and shapes.

ECONOMIC MACHINERY COMPANY

Builders of World Automatic and Semi-Automatic Labelers for Every Purpose

Worcester, Massachusetts

NEW YORK PHILADELPHIA PITTSBURGH CHICAGO SAN FRANCISCO DENVER LOUISVILLE
SALT LAKE CITY ST. PAUL SEATTLE PORTLAND LONDON MONTREAL TORONTO WINNIPEG
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For War Time Packaging



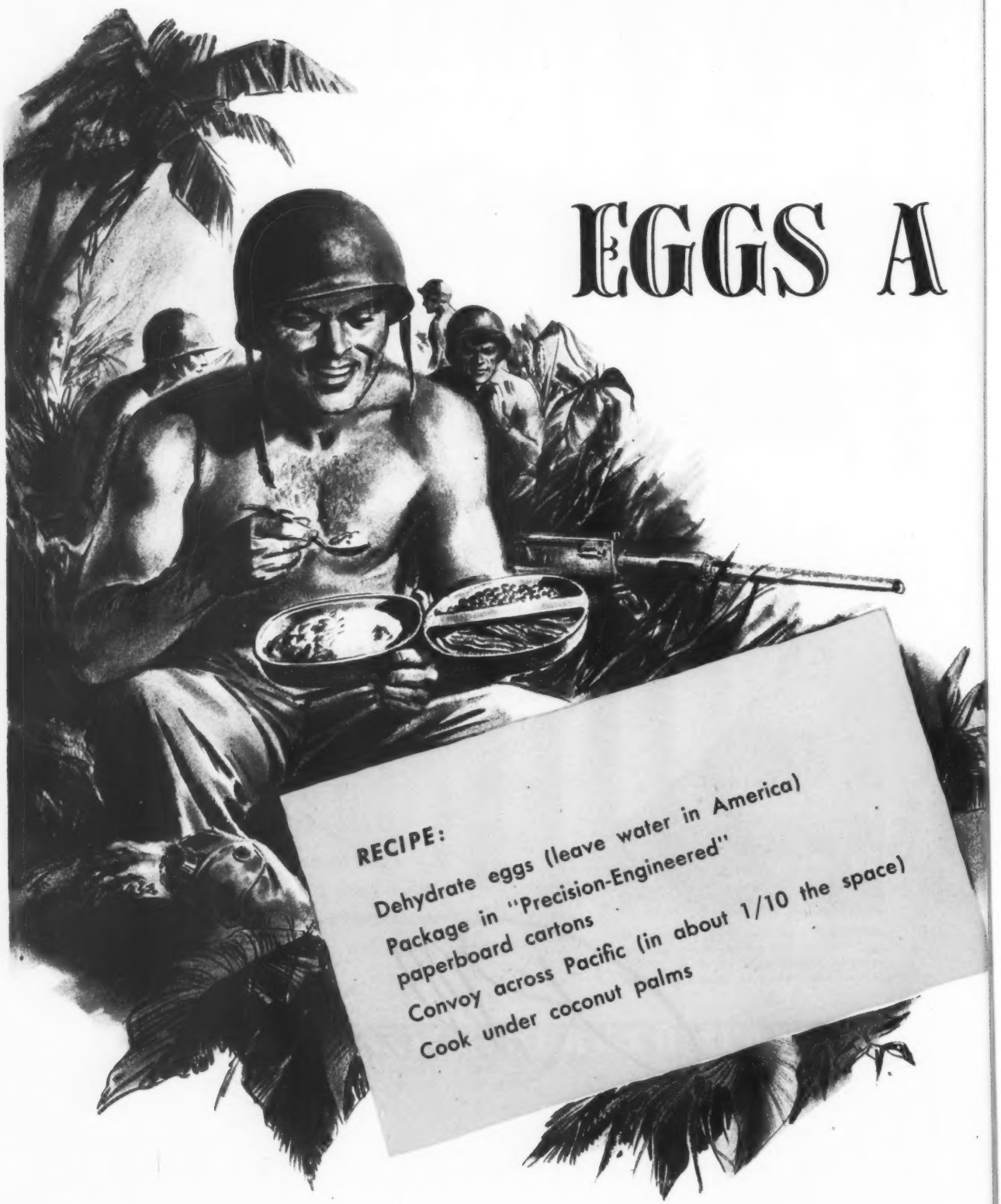
Ribbonette

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CHICAGO PRINTED STRING CO.

2319 LOGAN BLVD
CHICAGO, ILL.

225 FIFTH AVE.
NEW YORK, N.Y.


EGGS A
RECIPE:
Dehydrate eggs (leave water in America)
Package in "Precision-Engineered"
paperboard cartons
Convoy across Pacific (in about 1/10 the space)
Cook under coconut palms

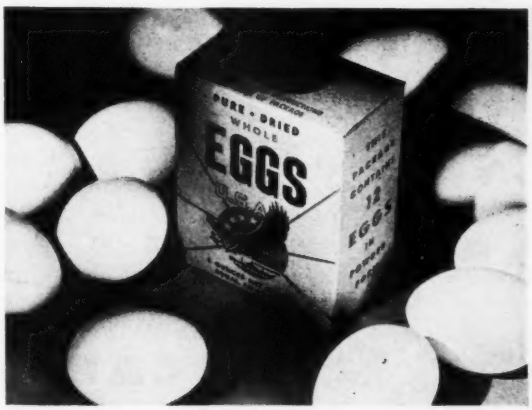
LA GUADALCANAL

With our fighting fronts thousands of miles from the nearest home port, it's a weighty problem to keep our fighting men well fed. But it's a less weighty (and less bulky) problem when eggs, vegetables and dairy products are dehydrated before they are loaded on to a ship.

An egg, for example, contains 65 per cent water. A potato, 78 per cent. Peas—74 per cent. But when dehydrated and packaged in light, specially-developed paperboard cartons, they save on an average of 90 per cent in cargo space—*and cargo space is of first importance today!*

★ ★ ★

Here, at Gardner-Richardson, we have developed specialized containers and paperboard to meet the needs of our armed forces, also to meet essential civilian needs. Someday these developments and improvements will be available for the more practical packaging of the products of peace.



The GARDNER-RICHARDSON Co.

Manufacturers of Folding Cartons and Boxboard

MIDDLETOWN, OHIO

GARDNER-RICHARDSON
FROM PULP TO FINISHED PRODUCT
ENGINEERED PRECISION

Sales Representatives in Principal Cities: PHILADELPHIA • CLEVELAND • CHICAGO • ST. LOUIS • NEW YORK • BOSTON • PITTSBURGH • DETROIT



YOU MIGHT BE SURPRISED-

Amazement is a frequent caller at the minds of Americans. Hardly a week passes without exciting information from some source turning up to lay low the old adage, "There's nothing new under the sun."

Occasionally, it is the commonplace and the ordinary which is provocative of surprise. For example, there's the tremendous importance that Carr-Lowrey craftsmen attach to such a simple thing as precision. To learn how, in every department of our plant, the demands of precision are met with scrupulous fidelity, is to gain an insight into one of the secrets of Carr-Lowrey operation. Without such painstaking adherence to the principles of accuracy, such excellence in production could not be attained.

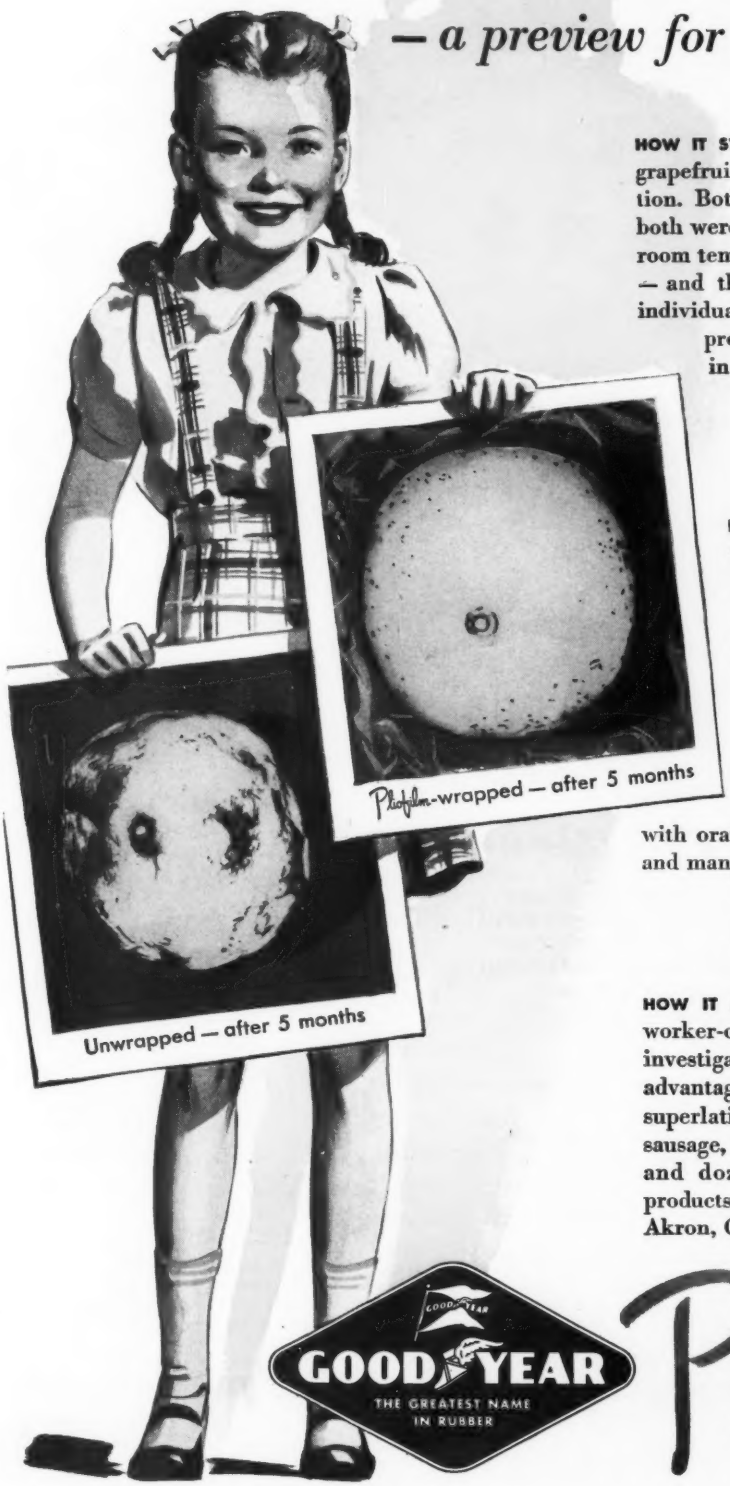
The principles are not new, but if you could see how they constitute an inflexible standard by which all our manufacturing operations are carefully measured, YOU MIGHT BE SURPRISED.

CARR-LOWREY GLASS CO.

Factory and Main Office: BALTIMORE, MD. *New York Office:* 500 FIFTH AVENUE *Chicago Office:* 1500 MERCHANDISE MART

The Grapefruit that wouldn't grow old!

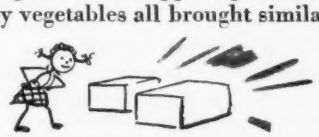
— *a preview for smart packagers*



HOW IT STARTED. Once there were two groups of grapefruit, identical twins in juicy, fresh perfection. Both were picked from the same grove; both were stored in the same place, at the same room temperature. But one was left there naked — and the *other* wore sparkling, sealed-tight, individual wrappers of Goodyear's moisture-proof, airproof **Pliofilm.** And they stayed in storage for five full months.



HOW IT CAME OUT. The photographs (left) tell the story pretty clearly. So does the report of the Agricultural Experiment Station of the University of Florida, which made the test: "The grapefruit wrapped in **Pliofilm** showed no loss of flavor and little shrinkage as compared with the unwrapped fruit... the original appearance of the fruit was unchanged...Vitamin C content very slightly diminished." And tests with oranges, lemons, apples, peaches, mangoes and many vegetables all brought similar results!



HOW IT AFFECTS YOU. Pliofilm today is a war-worker-only. But wise marketers are invited to investigate now the top-freshness, top-protection advantages of **Pliofilm** for postwar packaging—a superlative safeguard for cheese, meat loaf, sausage, coffee, nuts, pharmaceuticals, chemicals and dozens of other air-moisture-sensitive products. Write: **Pliofilm** Sales Dept., Goodyear, Akron, Ohio.

GOODYEAR
THE GREATEST NAME IN RUBBER

Pliofilm

Pliofilm—T. M.
The Goodyear Tire & Rubber Company

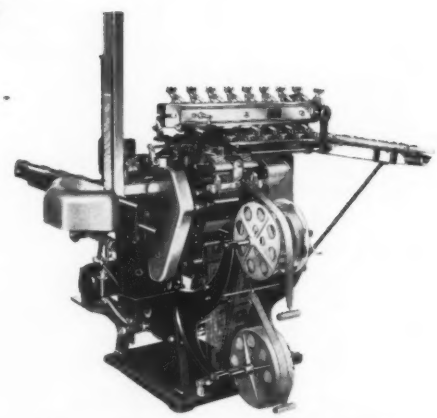


90 to 120 Units per Minute

Our huge allied nations army will demand a tremendous supply of army field rations. Help supply this demand by wrapping your bars the Wrap-O-Matic way. Wrap-O-Matic will help speed up your production and at the same time save vital materials and labor . . . savings in materials up to 35% and in labor up to 75% . . . a vital factor in today's material and manpower shortage. Wrap-O-Matic wraps at high speed (90 to 120 units per minute), with or without liners, and uses any wrapper that can be printed in rolls.

Speed up your production of K1's—K2's—fruits bars, chocolate bars and candy bars for our fighting men, the Wrap-O-Matic way.

Investigate Wrap-O-Matic . . . accept our invitation to have our engineers survey your wrapping problem. Write today for details of how Wrap-O-Matic will increase your production.



Wrap-O-Matics are built in 2 basic models —Side-intake (illustrated) for feeding directly from enrober belt . . . straight-intake especially designed for 2 or 3 piece bars.

LYNCH Manufacturing Corporation, Defiance, Ohio U.S.A.

WRAP-O-MATIC DIVISION



With all inside surfaces of the tub covered with Alcoa Aluminum Foil, butter will retain its moisture content and will be less likely to pick up objectionable tastes.

Aluminum
IS A NATURAL
PROTECTOR

Alone, or in combination with other materials, it excels in preserving freshness, flavor, volume, aroma and color of products that are sensitive to air, light, heat, and gain or loss of moisture. Its sparkling beauty makes a handsome package, too.

ALCOA ALUMINUM

. . . and not just for butter tubs

This butter tub is a perfect illustration of Protective Rule No. 1 of aluminum foil packaging:

Keep the foil as close to the product as possible

Aluminum foil on the *outside* of the tub would be pointless. Butter would lose moisture into the container walls, and an undesirable flavor would likely be acquired. *Inside*, where the foil is a barrier between product and container, it serves its function best.

This idea, lining a container with Alcoa Aluminum Foil, can be readily adapted . . . postwar . . . to any product which would benefit by the highly effective protection that foil affords. Whether your package employs wood, corrugated, boxboard or paper, all of which are permeable to air and moisture, put aluminum foil *next* to the product for maximum protection.

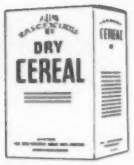
Working out the details of how this can be done most practically is an Imagineering job in which we would like to team up with you. ALUMINUM COMPANY OF AMERICA, 2129 Gulf Building, Pittsburgh, Pa.

Think of ALCOA ALUMINUM

when you think of tomorrow's packages

FRESH FROM *Factory* TO *Fox Hole*





Riegel Paper Protects Cereals in Special "Eat-Right-Out-of-the-Box" Package



Dried Eggs and Many Other "Lend-Lease" Foods Use Riegel Protective Papers



New Papers Have Been Developed for Packaging of Field Rations

It used to be..."Fresh from Maker to Consumer." But today...with "consumers" scattered all over the globe; living and fighting under all sorts of conditions and climates . . . the problem of keeping food fresh is taxing the dexterity of packaging engineers as well as the output of packaging materials.

We have helped many food products to solve this problem, for the primary function of Riegel Papers has always been the *protective* packaging of food...and we have helped to do it simply, quickly and inexpensively through variations or combinations of known materials.

These increased demands and government restrictions on output now prevent us from accepting new business...but we are still just as able and willing as ever to help you find a solution to your present packaging problems or to assist in preparing new horizons for your food packaging of tomorrow.

RIEGEL PAPER CORPORATION

85 342 MADISON AVENUE • NEW YORK, N. Y.

Sealing the last-minute sting in a bomb



A "block buster" bomb is harmless . . . until someone opens a "tin can."

This can contains the bomb's sting —a fuse. Without it no bomb can explode. At the last minute before a raid, the fuse is taken from the can and shoved into the nose of the bomb.

This fuse has to be *right* when it goes into the bomb. That's why it's packed in a can.

A damp fuse could turn a costly bomb into a worthless dud. But the "bomb fuse" can, moisture-proof and air-tight, keeps each fuse safe and dry until it's needed.

Vital materials like this are riding off to war by the millions in America's favorite container. They — and the can—are working for American boys, helping them do a job and come out on top. The essential things you get in cans—food, fuel, medicine—are also going to the fighting fronts in cans.

Cans are tough. They don't break, chip or tear. They protect against water, dirt, light, insects. Things get there—*safe*—in cans.

The can that goes to war today will be back again . . . guarding the things *you* depend on. It'll be better than ever, thanks to the experience we're gaining as packaging headquarters for the boys in uniform.

CONTINENTAL CAN COMPANY



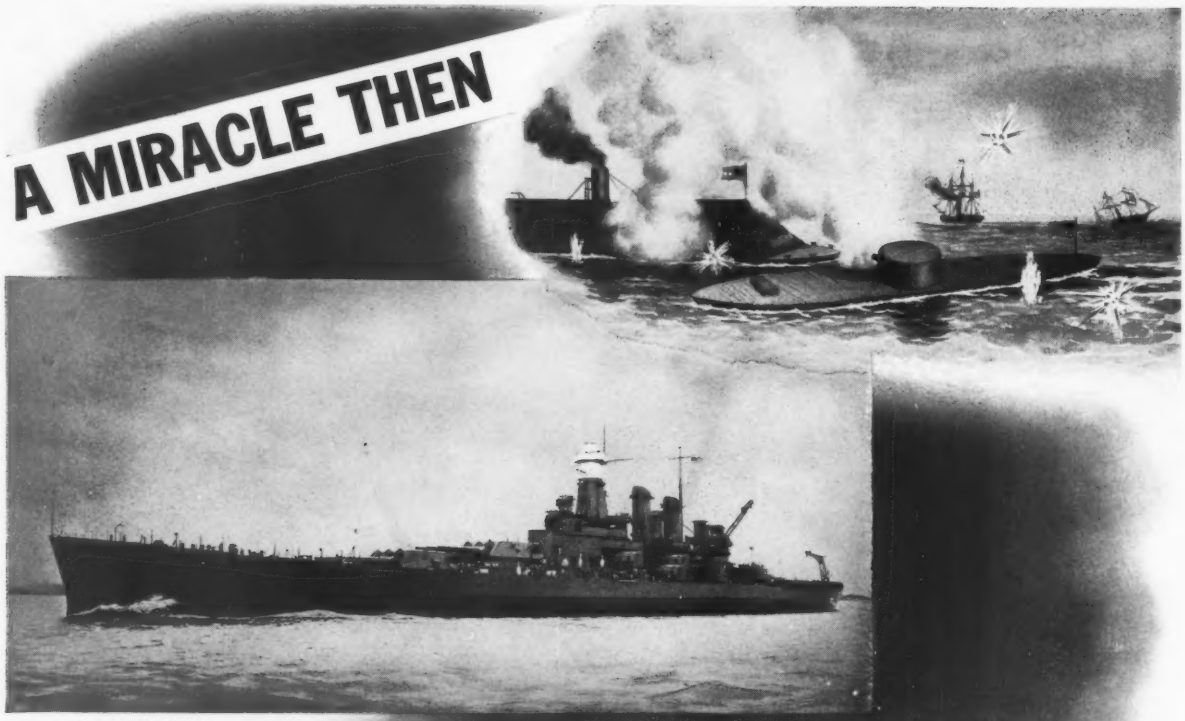
NOTE
TO WAR MANUFACTURERS

Metal containers are delivering the goods *safely*—foods, supplies, and bullets arrive ready for action. Continental is making millions of these cans along with other war needs, including plane parts.

Yet, rushed as we are, we can still take on more! Right now, a part of our vast metal-working facilities for forming, stamping, machining and assembly is still available. Write or phone our War Products Council, 100 East 42nd Street, New York.

HELP CAN THE AXIS—BUY WAR BONDS

A MIRACLE THEN



U. S. NAVY PHOTO

But Not Good Enough Today!

The "Monitor" of Civil War Days—armored "cheese box" of the U. S. Navy—wrote a startling page in the history of metal ships. A sensation in '62, but not comparable to our fighting ships of today.

NEUTRAGLAS—offering the highest resistance to solvent action and chemical attack—was developed by Kimble because no glassware can be just "good enough" if better is obtainable.

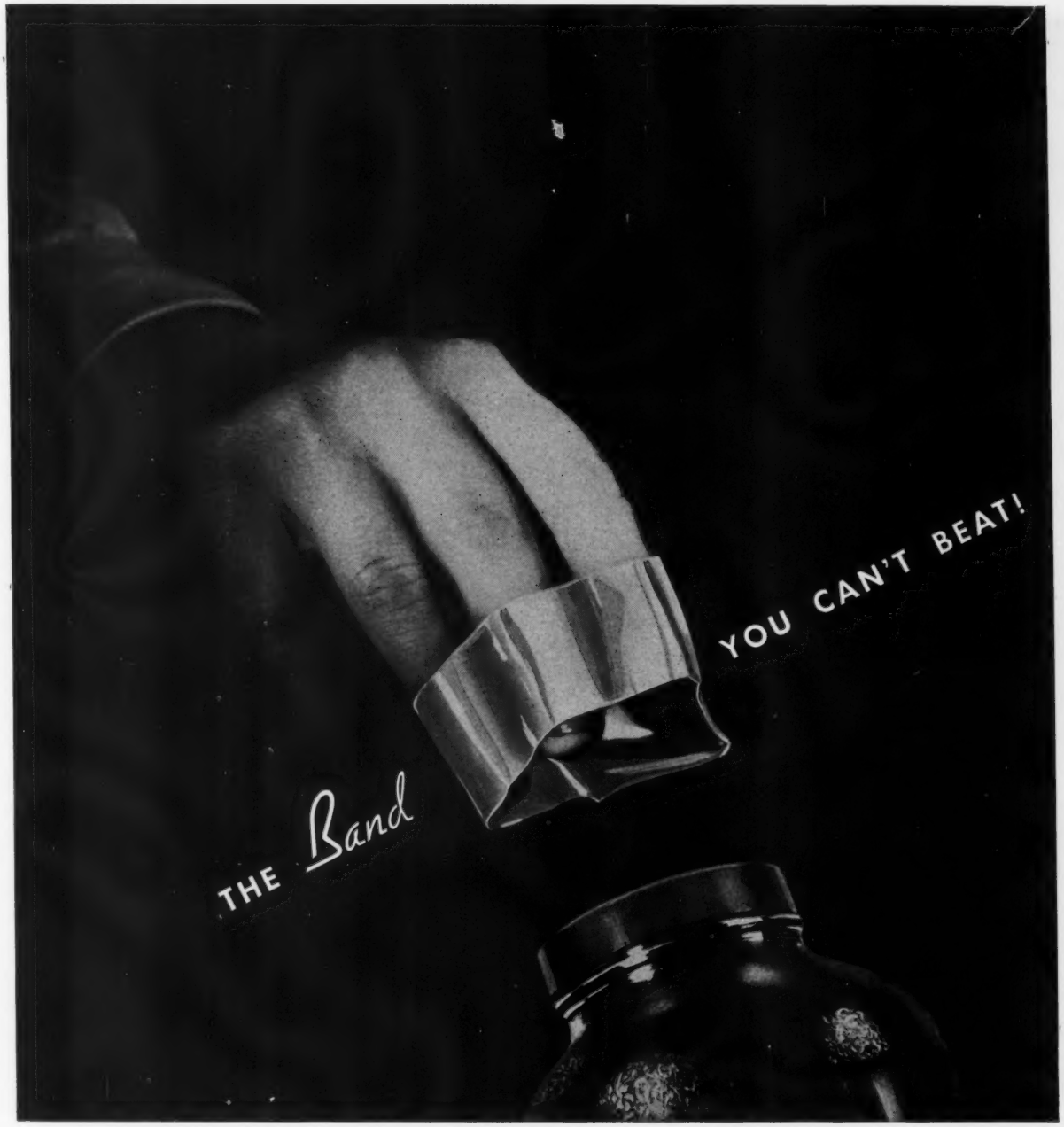


Standardize NOW *on Kimble Ampuls, Serum Vials, Serum Bottles and Clinical Glass containers of* NEUTRAGLAS.

• • • *The Visible Guarantee of Invisible Quality* • • •

KIMBLE GLASS COMPANY . . . . VINELAND, N. J.

NEW YORK • CHICAGO • PHILADELPHIA • DETROIT • BOSTON • INDIANAPOLIS • SAN FRANCISCO



SYLPHSEAL* Bands are replacing critical metal as perfect accessory closures for coffee jars and other glass containers† where tamper-proof protection is desirable. They quickly shrink to fit, requiring no machinery for their application. SYLPHSEAL Bands, in their wide range of sizes, styles and colors, offer a practical solution to many closure problems. Tell us yours!

SYLPHSEAL* SYLVANIA **Bands**

†The use of SYLPHSEAL Bands is regulated by W. P. B. Limitation Order #L20. Copy on request.

SYLVANIA INDUSTRIAL CORPORATION

General Sales Offices: 122 East 42nd Street, New York City

Works and Principal Offices: Fredericksburg, Virginia

**Trade Mark Reg. U. S. Pat. Off.*

Through Hell and High Water, Reynolds



Allied infantry crawling forward under Japanese sniper fire in the Buna Area, New Guinea. *(Photo by Press Association)*

s Foil Protects the First Aid Packet!



GOING into battle, every U. S. soldier carries the Army First Aid Packet on his back—a packet that's a miracle of medical science and a *marvel of modern packaging.*

Developed through the resourcefulness of the Army Medical Dept., the packet contains: the Carlisle bandage, sulfanilamide powder to prevent infection, sulfadiazine tablets to increase resistance to infection, and benzedrine sulfate tablets to prolong mental efficiency during long combat hours without sleep . . . *all protected by Reynolds New Foil Packaging Material.*

This Reynolds Packaging—safeguarding food and munitions as well as drugs—is made of varied materials laminated to a solid sheet of metal foil. It's air-tight, water-tight, proof against light, insects, foreign odors, and moisture-vapor transmission. *Really armor-clad protection without the use of steel.*

Today, Reynolds presents this *battle-tested* material for application to your specific war and home front packaging problems. Tomorrow, Reynolds will give you the unbeatable combination of *its own abundant source of aluminum,* plus invaluable knowledge of packaging problems in every field of business.

THE FIRST AID PACKET CONTAINS THESE MEDICAL SUPPLIES



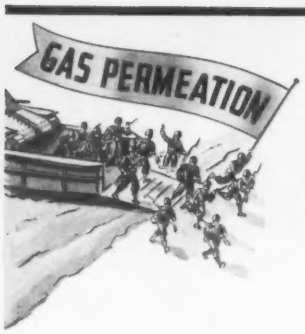
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2. ***Immersion-Proof. Keeps Water Out!***
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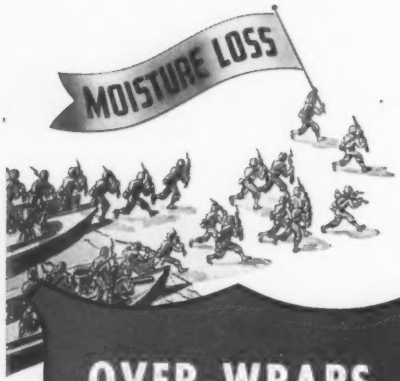


REYNOLDS METALS COMPANY

FOIL DIVISION—GENERAL OFFICES, RICHMOND, VA.









OVER-WRAPS TO RESIST "FOREIGN INVASION"

WARTIME Packaging finds added protection in over-wrapping. It's a versatile method. The required degree of protection and the proper amount of resistance to handling can be built into the single sheets or laminated papers which you specify for over-wrapping. And it's practical. Fits readily into production, takes minimum attention on packaging lines. The paper-making resources and the experience of Menasha in making and applying over-wraps is ready to tackle your special job.

OVER-WRAPS PROTECT VARIED PACKAGES

Compressed "briquettes" of dehydrated food are fully protected by proper over-wrapping . . . Soup-mix cartons, destination overseas, use the sure protection and faster packaging of over-wraps . . . Cigarette cartons for export are individually wrapped in a special laminated over-wrapper to perserve freshness.

Send for our "Wartime Packaging" booklet.

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MENASHA PRODUCTS
CARTONS, LINERS
BAGS AND OVERWRAPS

A QUART IS ALWAYS 32 OUNCES

. . . when glass craftsmen check capacity



MEET GUY FISHER, SR. His is the important job of making sure that the capacity of every piece of Armstrong's Glass is accurate, that each container will hold exactly the volume that the buyer specified. If a piece of ware gets too much glass, its capacity will be short. If too little glass is used, its capacity will be greater than it should be.

So Guy Fisher carefully "weighs in" bottles selected from every machine run, with skill and certainty developed by more than 35 years of glassmaking. His training and experience, and that of his co-workers in Armstrong's plants, help keep Armstrong's Glass the top-quality glass.

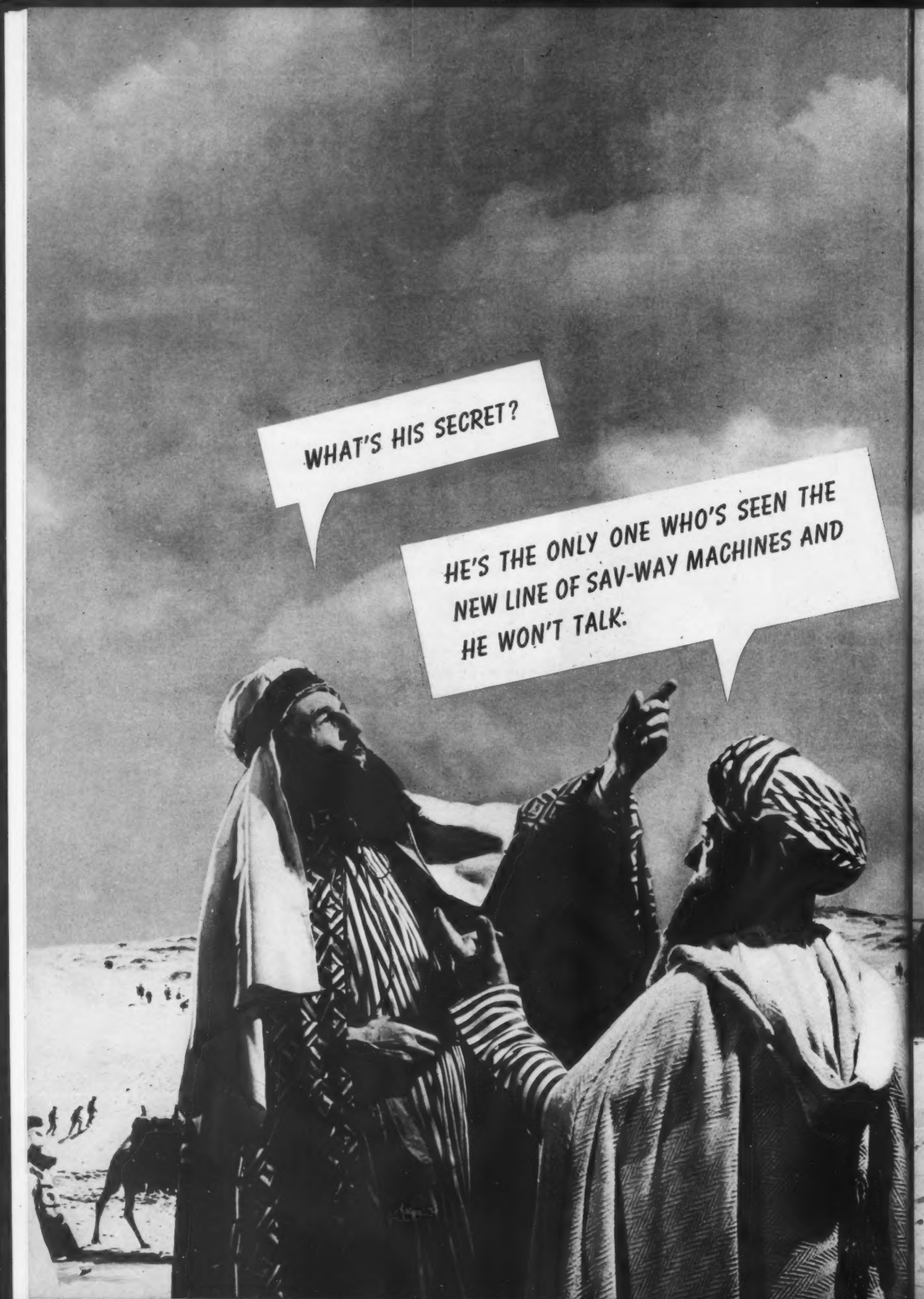
For a more complete story of Armstrong's Glass and the men and women who make it, send for Armstrong's new booklet, "Men and Glass." It's free. Just write Armstrong Cork Company, Glass and Closure Division, 5907 Prince Street, Lancaster, Pa. Plants at Millville, N. J., and Dunkirk, Indiana.

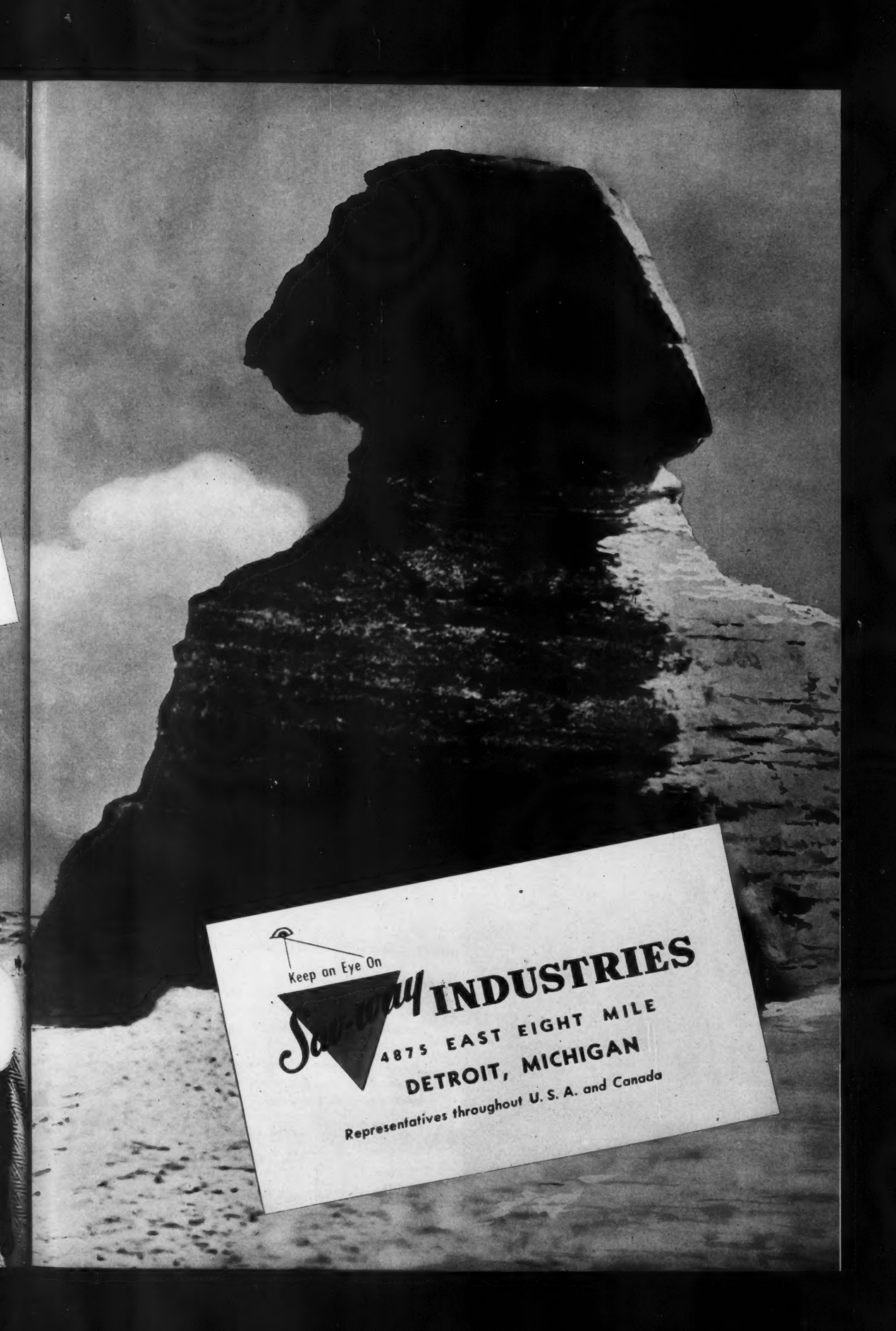
ARMSTRONG'S GLASS



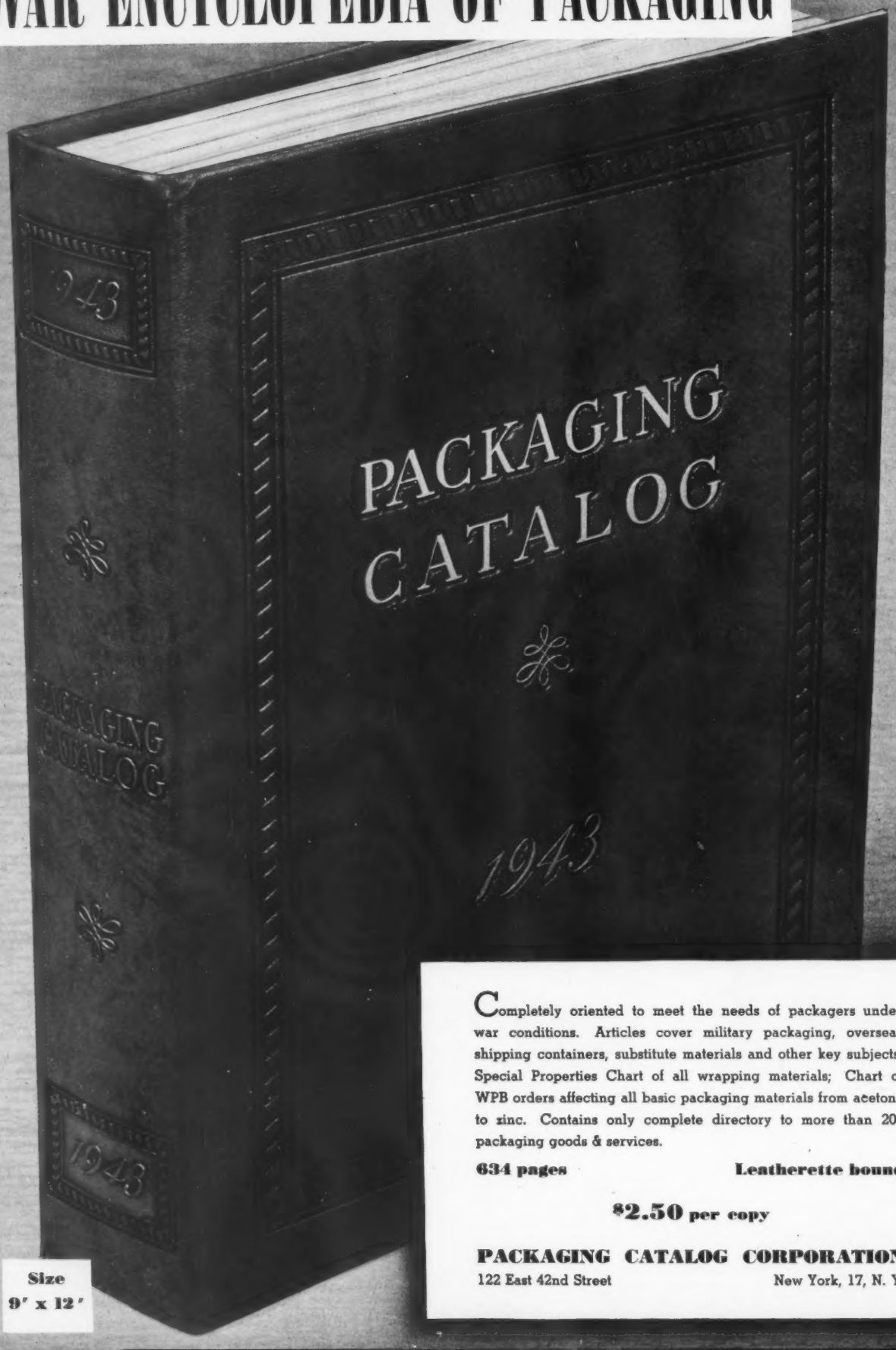
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Representatives throughout U. S. A. and Canada

WAR ENCYCLOPEDIA OF PACKAGING



Completely oriented to meet the needs of packagers under war conditions. Articles cover military packaging, overseas shipping containers, substitute materials and other key subjects. Special Properties Chart of all wrapping materials; Chart of WPB orders affecting all basic packaging materials from acetone to zinc. Contains only complete directory to more than 200 packaging goods & services.

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ON GUARD...

AGAINST MOISTURE-DAMAGE TO FOODS!

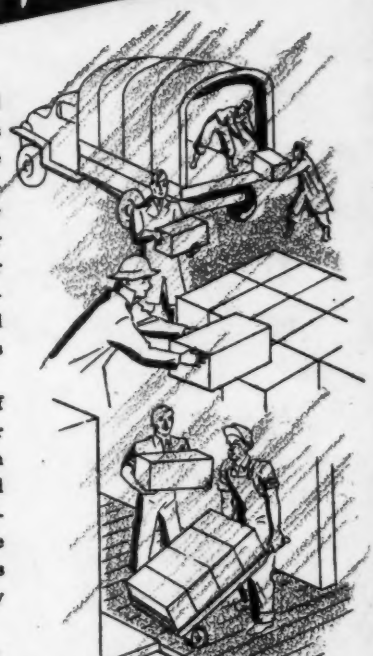
McLAURIN-JONES *Moisture-Resistant Food Wrap and Waterproof Tape*

Moisture damage is a constant threat to the foods being shipped to our boys in every corner of the globe.

The Services of Supply must be on its toes, ready to take every precaution—be constantly *on guard* against water that might permeate these priceless cases and cartons of foods.

To aid in this unrelaxing vigil come McLaurin-Jones' new Moisture-Resistant Food Wrap and the waterproof Solseal-Coated Tape for strapping and sealing watertight packages (and provided with adhesive materials capable of withstanding the rigors of heat, humidity and cold). They are the answer to a quartermaster's prayer for thorough protection of dehydrated and frozen foods as well as grease products for overseas shipment.

If you require this type of inner-liner and bag-wrap, or waterproof tape, get in touch with us *now!* We'll respond promptly with complete technical data. Or, if you prefer, we can make the necessary analyses for you in our completely equipped laboratories!



This moistureproof, greaseproof, heat-sealing coated (2 sides) stock is one of many WARE-WRAP papers. This new line also includes laminated as well as coated sheets, suitable for frozen and dehydrated foods, grease products, etc.

Other McLaurin-Jones Products

Included are the following:

ALCOSEAL—*Waterproof label papers sticks to metal.*

PHOTO MOUNT CLOTH

GUMMED PAPER TAPES
Electrical
Sealing
Stay
Veneer

GUMMED CLOTH TAPES
Corrugators
Bookbinders
Electrical

COATED PAPERS
Brush Enamel
Plateds
Metallics

LAMINATED MATERIALS
Cloth
Papers
etc.

IMPREGNATING AND SATURATING

McLAURIN-JONES COMPANY

General Offices, Brookfield, Mass. Mills: Brookfield, Mass., and West, Mass. Offices: New York, Chicago, Los Angeles

ON GUARD...

AGAINST MOISTURE-DAMAGE TO FOODS!

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Included are the following:

ASCOTAL—
waterproof (sole) papers, glass to metal

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GUMMED PAPER TAPES

GUMMED CLOTH TAPES

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McLAURIN-JONES COMPANY

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I pledge allegiance . . .

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If you can't fight, work your hardest and continue to buy War Bonds.

A War Bond is the practical pledge of allegiance.

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SAVE 8 MEN IN PACKING AND LOADING OPERATION

A plant shipping products in multiwall bags required 16 men to pack and load their output. A Bemis Multiwall expert recommended rearrangement of packing equipment and slight mechanical changes. Results: 8 men doing the work previously requiring 16!

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The *Marine's* Pledge To His Gun

"... My rifle ... I will ever guard it against the ravages of weather and damage, as I will ever guard my legs, my arms, and my heart against damage. I will keep my rifle clean and ready, even as I am clean and ready ..."



The *Packaging* Pledge To A Gun

... The packaging industry will provide protection for guns—from factory to firing line—against the ravages of weather and damage. Will keep them clean and ready. ... Fulfilment of this pledge is made possible by laminated combination materials, to which LUMARITH is contributing its qualities ... usually as a barrier against water, grease, oil; often as much more. Celanese Celluloid Corporation, *The First Name in Plastics*, 180 Madison Avenue, New York City, a division of Celanese Corporation of America.

LUMARITH*

FOR PACKAGING

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Thompson Submachine Guns in Dearborn Chemical Company's No-Oxide Cloth No. 4.

*Trade Marks Reg. U. S. Pat. Off.



ACHIEVEMENT THROUGH CRAFTSMANSHIP

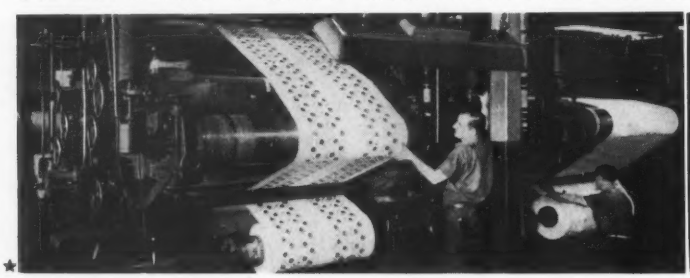
Wars destroy much, but the knowledge of precise and efficient methods survives. Progress is not permanently impaired. What man has done, he can do again and — in the light of experience and broader vision — do better.

The *Craftsmanship* for which NASHUA is noted is the result of nearly 100 years of developing men and machines to do with paper something better than had ever been done before. *Nashua's Craftsmanship* has earned for NASHUA'S many products a reputation for quality, uniformity and dependability.

Nashua's Craftsmanship is scheduled for post-war application to many new conceptions for the economic use of paper products.

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WE ARE CONVERTERS OF PAPER — COATING, GUMMING, IMPREGNATING, LAMINATING, PRINTING, WAXING. OUR BASE MATERIAL IS PAPER OF MANY TYPES. WE ARE ALSO CONVERTERS OF CELLOPHANE.



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MAKES PAPER MAKE MONEY FOR YOU

★ BUY MORE WAR BONDS ★

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JULY 1943 VOLUME 16 NUMBER 11



1. *Binoculars and telescopes are only two of the 4,000 optical instruments made and packed by Bausch and Lomb for war, for public health and eyesight conservation.*

Precision packs for optical instruments

Everybody has two eyes to see with. One of the world's greatest precision industries is the making of optical instruments so that those eyes may see beyond their given range of vision.

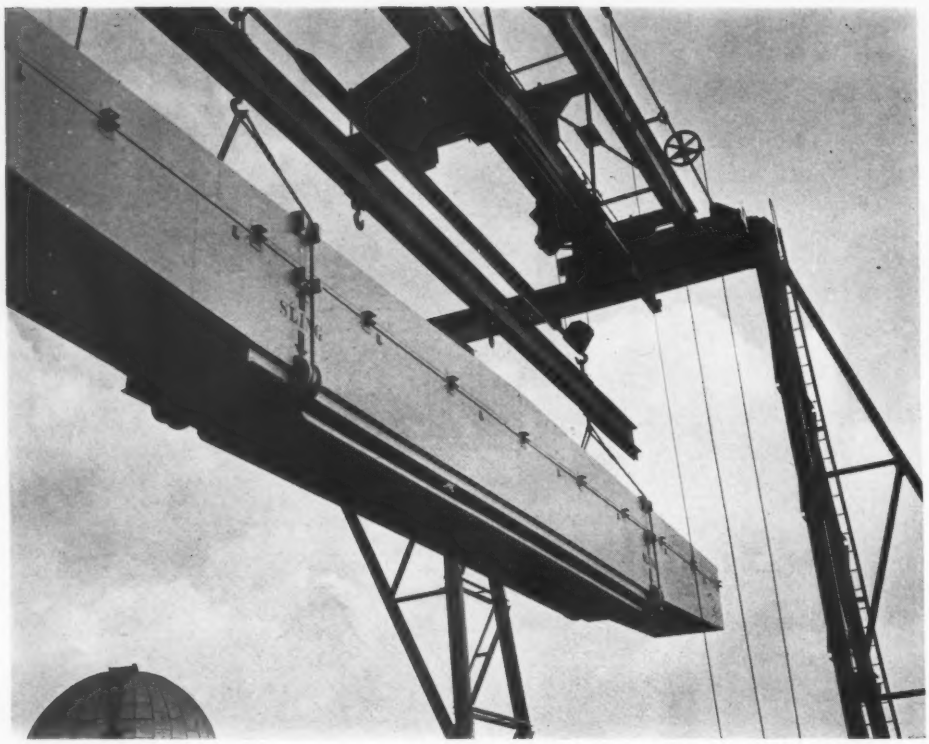
These instruments may be simple corrective eye glasses. They may be intricate microscopes that magnify tiny particles a thousand times. They may be 11-ton range finders for the control of anti-aircraft gunfire.

Whatever they are, these delicate instruments must be packaged with the same precision as they are made.

Bausch and Lomb, the optical arsenal at Rochester, N. Y., makes more than 4,000 optical products necessary for war, for public health and for eyesight conservation.

The magnitude of this undertaking from a packaging standpoint may be realized when it is known that there are something like 23,000 kinds of lenses for eye glasses alone, 60,000 different types of eye-glass frames—each of which must be classified and packaged by hand. Some of the optical instruments packaged for shipment to the war fronts, for example, are so big that it takes a specially designed railroad car to carry just one of them. Certain spare parts are so small they are sometimes handled on black velvet to be seen and if they get lost, the boys in the plant say facetiously that flies carry them away.

In the packaging of these 4,000 products, Bausch and Lomb uses almost every kind of packaging material—paper, glass, plastics, metal, wood, leather, leatherette, textiles, water and greaseproof films, cellophane, cellulose wadding, excelsior, corrugated and solid fibre. In fact, in the package sample room, the only kind of material you can't find is molded pulp. The list of containers and packaging supplies used would cover almost every classification in the Packaging Catalog.



2. In this huge steel case is an 11-ton range finder for the control of anti-aircraft gunfire. Instrument is tested on the roof, then packed and lowered to specially built gondola car, which starts it on its way for use in war zones.

The packaging department for Bausch and Lomb is under the direction of A. W. Anderson. Shipping problems are handled by Matthew Meisenzahl. Since the company began its expansion program for war production in 1940, these two departments have been working closely together. All new problems are referred to the packaging department which works out details of interior packing, new materials and studies government packing specifications, while the shipping department works out the engineering construction and materials to be used for the large packing cases.

Contrary to what might be generally supposed, while prevention of corrosion is important it is not one of the prime packing considerations for many of the Bausch and Lomb war babies. Range finders, for instance, and binoculars, more of which the company is producing in one month than it formerly produced in a year, must be made in the first place to withstand all kinds of weather They are for outdoor use in the field and on the decks of ships, hence must be weatherproof products in themselves.

Therefore, first consideration is adequate protection against shock which might injure mechanism or the finely made glass lenses, rather than protection against possible submersion. Such products are watched closely in shipment but Bausch and Lomb said they are rarely if ever affected by the weather-beating from which other war materials might suffer. Where tests for materials and construction were believed necessary containers holding such equipment have been given a certain number of free drops in the factory, but there have been few occasions for more extensive testing. The company has been shipping such materials for so many years, they have learned through long experience just what protection against shock is required.

A great deal of attention has been given to the problem of cubic displacement and wherever possible all supports have been designed on the inside of the containers to save space. Because of the specialized equipment to be packed, the company maintains its own wood working shop where the boxes and crates are made to specifications for each product. Most of this work is done by men who have been with the company many years and who have learned by actual experience what is required.

Much attention has been given also to the marking of containers, which are stenciled wherever stenciling is feasible. Other descriptive data is put on in bold letters with indelible pencils.

There is little chance of error, since every package is checked by a government inspector sent by the Army or Navy. At the Bausch and Lomb plants, both Army and Navy employ young women to do this work and at all hours of the day, whenever a shipment is going out, you may see these young women (the Navy girls in special uniform but not WAVES), with copies of order sheets in hand, going among the boxes to see that each is correctly marked and addressed for its destination.

The outstanding shipping job and one which Bausch and Lomb is proudest of solving is a steel case for range finders. The largest of these instruments is more than 40 feet long and weighs 11 tons. Prior to shipment it is tested in a special testing tower on the roof. There it is put into a steel case and lowered to specially designed gondola cars on a railroad siding beside the plant. Steel was selected as the only material which would give adequate protection for an instrument of this dimension and weight. The gondola cars were built by the New York Central with special recoiled springs and shock absorbers. Cables to secure the instrument in its container to the car have a tension of 7 tons.

A new problem which has come to Mr. Anderson's department is the packaging of spare parts for binoculars. Because

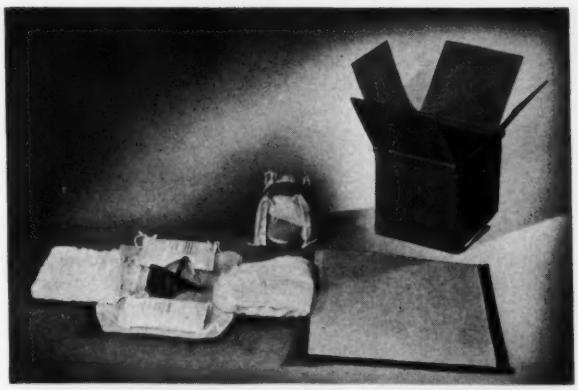
these are separate parts, many of them metal, they must be packaged in accordance with the Army-Navy specs to prevent corrosion. Method II was selected, employing the use of silica gel as a dehydrating agent to maintain a low relative humidity and a moistureproof barrier having a maximum moisture vapor transmission rate of 0.25 gram/100 sq. in./24 hrs. with vapor pressure differential of 42 mm. of mercury at 100 deg. F. The parts, such as lenses and prisms secured to metal framework, are first wrapped in rice lens tissue to prevent scratching of the surface of the glass. Then around this first wrapping is placed a protective wrapping of cellulose wadding to prevent breakage. On each side is then placed a bag of silica gel crystals to adsorb humidity. The assembly is then placed inside a moistureproof barrier of kraft and fabric laminated with lead foil, cellophane and asphalt. This is then heat sealed. This spare part is finally placed in a weatherproof carton.

Tiny metal hardware parts, such as screws, are placed four to a packet about two inches long and one inch wide. The packet is a moisture-resistant impregnated paper. Four of these envelopes are placed in a small kraft covered set-up box so these tiny parts may not be lost.

All the detail of such packaging is worked out in Mr. Anderson's department. Each production division of the company brings its problems to him for solution. Every day there is something new coming up. Many times it means only the specifications for a certain size set-up box, but many times it involves the use of new materials or alternates, although most of the important changes brought about by the war have now been made.

The designer is Miss Dorothy Knight, who has taken over since two young men who preceded her have joined the colors. Most of her time these days is spent studying the government packing specs and preparing charts which desig-

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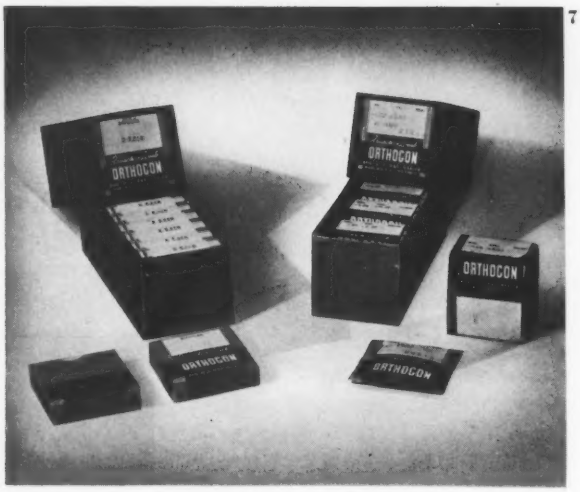
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3. Binocular parts must be protected from corrosion in moistureproof assembly with bags of silica gel as a dehydrating agent and moistureproof barriers according to government specs (see text). 4. Tiny screws are put into moisture-resistant envelope, then envelope in box so that minute parts are not lost. 5. Grinding and polishing compounds are in paper and glass. 6. Cellophane is eliminated from eye-glass frame folder. Note improved folder with die-cut end flaps to keep product from slipping out.

6





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8



9

7. Family design for lenses was adopted, but dealers didn't like it because uniform color scheme made it difficult to identify stock. There are something like 23,000 different lenses. 8. Bausch and Lomb redesigned to maintain trade identity, but provided a different color for each type of lens. 9. Group of lens envelopes shows how trade design is same, no matter what the color. 10. Packing must all be done by hand. Each packet of lenses must be stamped for size and power of the lenses it contains.

nate how each product is to be packaged in accordance with military specifications, the types of packaging materials required, the correct sizes of containers, wrapping materials, quantities, etc.

Since the making of optical instruments is an essential industry, there has been very little difficulty in securing packaging materials. Most of those used can be obtained on high priorities. Only in the field of certain chemicals has Bausch and Lomb been limited in the use of metal containers formerly used. Five-pound and 50-lb. quantities of emery for lens grinding are now put into a corrugated bag-in-carton package with an inner bag of laminated kraft and asphalt. Iron oxide or "rouge" as it is called in the optical trade, used for polishing lenses, has been put into glass jars with metal closures. This is a semi-liquid paste compound and could not be sufficiently protected in a paper container.

An impressive thing about optical glass packaging is the absence of automatic packaging lines. Aside from the packaging of chemicals, there is practically nothing that lends itself to a machine production line. Although the company produces millions of eye-glass lenses and frames, it would be difficult to imagine how these expensive, delicate products could be put through a hopper or on a conveyor through a wrapping machine. Yet each one must be carefully wrapped to protect it from scratching and breakage. Machine-line packaging is impossible for another reason. Every one of the many thousands of lenses must be measured for its power and size, and the packet that contains it must be so marked individually.

That is why each pair of lenses is wrapped separately, placed in a packet or folding carton separately and every 12 of a kind wrapped together with a paper band, sealed with a hand-sealing machine. In units of 12 the lenses are placed in set-up boxes ready for distribution to the dealers. They are moved to the packing room for inspection and packaging in specially made wooden trays with partitions to hold each lens. Loss from breakage by this method is almost negligible, said Mr. Anderson. This work is done almost entirely by women and the training period is about six weeks.

Although eye glasses and frames are not sold for eye appeal in the usual sense, each manufacturer is desirous of having his product reach the dealer in the most attractive packages he can make. A few years ago, Bausch and Lomb felt that it wanted a family design for its eye-glass lens packets and boxes. Accordingly, the company adopted an over-all design and color scheme. They soon found, however, this wouldn't

work. Dealers didn't like the packets and boxes all the same color, because it was too difficult to pick out the various types of lenses. The company, therefore, changed the design back to a program of a different color for each classification of lenses to aid the dealer in locating them in his own storage cases.

Other than tissue wraps to protect them from scratches, and packets, folding cartons and bands to designate the kinds, eye-glass lenses need no other interior packing when placed in set-up boxes. They are packed so snugly in a box that they cannot move around. The flexibility of paper wrapping and packets between each pair of lenses provides just the right amount of shock absorption to prevent breakage. The theory is this: If you have anything breakable to pack, pack it tight enough that it can't move around, but not so tightly that there is insufficient play to absorb shock.

Lenses are marked with an almost invisible B-L trademark, which in no way interferes with the clarity of the lens. This was done after it was discovered before the war that the Japanese were putting Japanese-made lenses in packets printed with the Bausch and Lomb label. A trademarked lens stops such deception—since lens packets cannot be made absolutely tamperproof even when a gummed seal is pasted over the envelope flap.

Eye-glass frames are packed in die-cut paperboard folders. There is a die-cut clasp on the bottom of each in which the frames fit securely if they are inserted correctly. However, a while back, Bausch and Lomb discovered that the frames were slipping out of these folders. Inexperienced or careless workers were not putting the frames securely into the die-cut clamps. Consequently, since the folders had no end pieces, the frames slid out, got broken, lost, or mixed up.

The packaging department solved this difficulty by redesigning the folders with die-cut scored ends, which fold under to make completely closed ends. Now, even though a packer does not secure the frame carefully in the clamp, the frame cannot fall out because it is prevented from doing so by the protective end pieces. Another innovation is a redesign of the printing so that descriptive matter concerning the frame is on the top of the folder where it may be read easily when placed in a stock case. This makes it easier for the dealer to locate his stock. Formerly, these folders had cellophane windows so that product was visible from the outside, but this cellophane has been eliminated for the duration. The frames in folders are packed lengthwise, 5 to the box. Miss Knight is now working on a box design which has a die-cut portion on each side of the bottom. This is a design to make it easier to lift each folder out of the box.

In their spare time between war production assignments, members of the package department are working on post-war plans. Much of this work is on cases for their regular catalogued line, 45 to 50 per cent of which has been discontinued for the duration. They consider as a package, for example, the case for a microscope or a case for an assortment of accessories for ultra-violet photomicography. A professional man, naturally, would not buy (*Continued on page 100*)

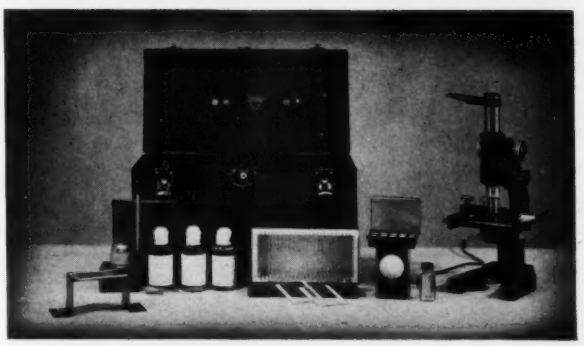
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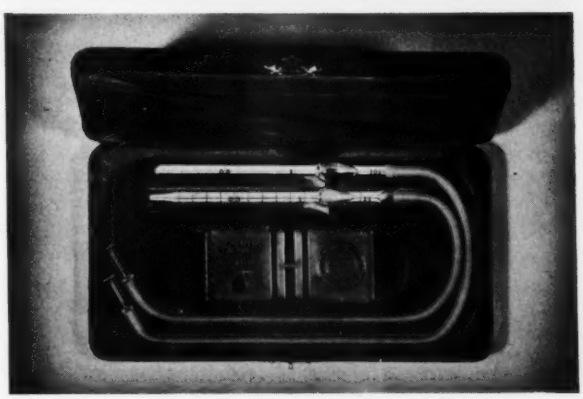
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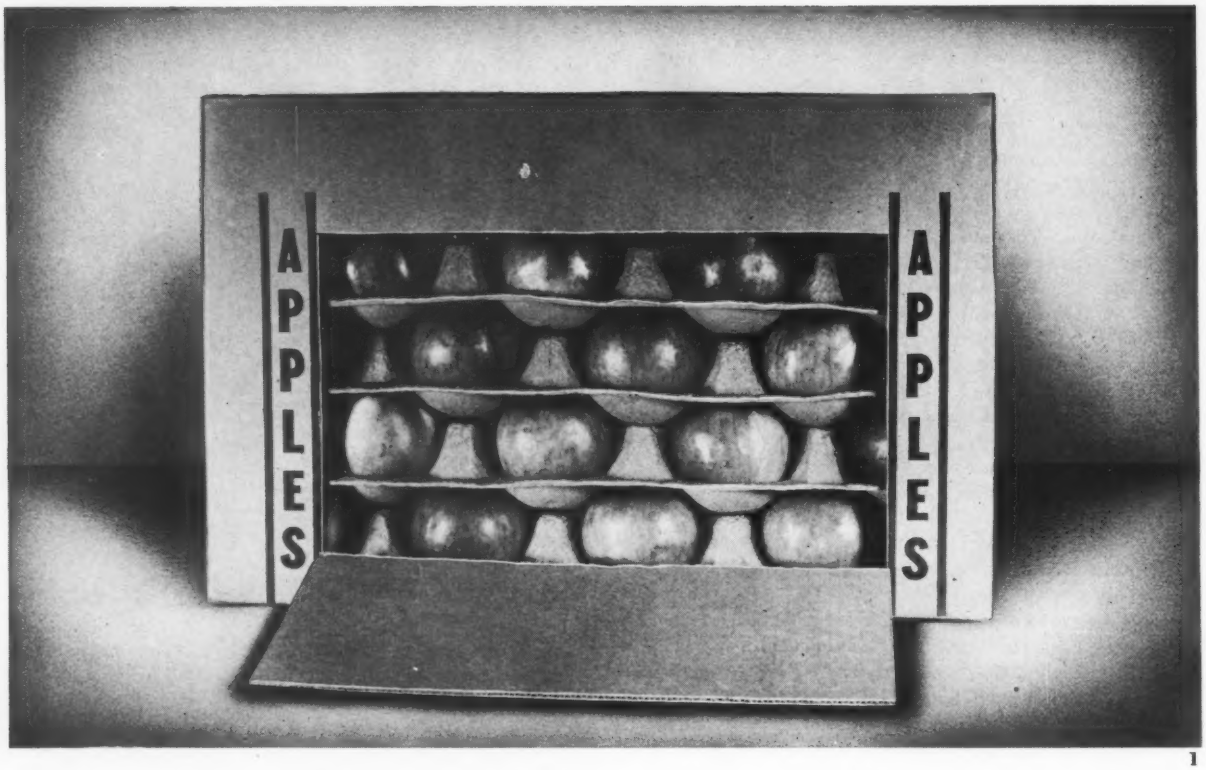
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14



11. ***Wooden container for amateur microscope.*** **12.** ***Specially designed case for amateur chemical laboratory set. Packaging department is now working on post-war plans for such products. These have been discontinued for the duration, but in normal times the case is an important part of sales appeal.*** **13.** ***Case for microscope and accessories used for milk inspection.*** **14.** ***Case for blood count equipment. Such cases must be styled to the scientific dignity of the product and to withstand years of use.***



1

Apples in molded pulp trays

Ever since railroading made possible the shipment of perishables over long distances, apple packers have been searching for better and more convenient methods of packing their fruit.

In the beginning apples were simply put into barrels and sent to their destination. Then bushel baskets became the accepted form in many parts of the country and are still used in considerable quantities. But with the increase of fruit shipping, more and more attention was paid to the condition of the apples on arrival at the point of sale.

The Pacific Coast districts were among the first to devise a shipping box which would assume a tight pack of known number and size. Today this box is known as the standard Northwest apple box, holding approximately 42 lbs. of apples. This box has proved to be one of the best methods for shipping in refrigerated cars, for storing in cold plants and as a protection against bruising.

However, one of the greatest hazards to apple shipping is scald—a sudden wilting or decay, which occurs during shipment and storage—due to certain chemical changes, as yet not completely explainable.

Much progress in controlling scald has been made through studies by the Department of Agriculture by wrapping individual apples in an oil-treated paper. For some time past, all important apple-packing centers have been using oiled wrappers for boxed apples.

However, the method is not altogether satisfactory and requires a considerable amount of experienced labor. Therefore, packers have been on the lookout for improvements in this method, and particularly this year when the labor shortage is acute and apples are packed by inexperienced help.

Again from the Pacific Coast comes a new method which will be used this season, it is estimated, for at least 1,500,000 boxes of apples during the 1943 season. Among the organizations who have already accepted it are American Fruit Growers, Inc., who ship from many of the important apple-growing centers throughout the country.

This method consists of packing the apples in molded pulp trays which are similar to molded pulp containers used for packing eggs. This container is called Friday Pack for Paul D. Friday, a Pacific Coast grower and packer, who has developed these trays and container because he wanted a better way of handling fruit to prevent bruising with available labor under present conditions.

The trays are molded from news pulp or ground wood. They are water-resistant since the pulp is treated in the beaters with moisture-resistant compounds in the sizings. Molds are of aluminum to save wear on the molding drum in this high-speed production. The trays are molded by the suction method. Molds, drilled with holes, are attached to the face of a rotary drum. A screen fits over the outside of the mold. As the molds move around the drum they are submerged into vats of the pulp mixture. By suction the required amount of pulp mixture to make the tray is lifted from the vat against the screen and pressed by male and female dies. The mold then moves on. The completed

trays are finally removed from the mold and put through the dryers. The complete operation is automatic and it is possible to make large quantities at very low cost.

Each tray for the 100 count carries 20 apples and is so molded that when one is on top of the other in the shipping box, the apples cannot move out of their original position and do not touch each other at any point. The trays are also so formed that no waste space is allowed between the apples since the molded material follows exactly the contour of the apples. The trays are designed to insure the exact count and size fruit as is commonly used in the Northwest bulge pack wood box.

The original trays were made in a blue color which adds much eye appeal to the box when it is opened, the rosy red apples shining between the colored housing of the trays. However, perhaps it will not be possible for all trays to be colored due to present war conditions.

After the trays are molded, they are sprayed with mineral oil to aid in preventing scald. This treatment with oil takes the place of former wrappings of oil-treated papers.

The shipping box used to hold the trays is made of double-face, B-flute corrugated board and is comparable with a wood box and its component parts. Various packers have their own trade identification printed on the boxes.

This type of package with interior trays in a corrugated box has no bulge when filled so that it stacks efficiently with no damage to the fruit. Test shipments showed that it reduces bruising 85 per cent. It has been put through severe drops in a revolving drum and has passed all of these tests.

It can be handled on the same equipment such as elevators, conveyors, etc., as other types of standard apple boxes. It is said that inexperienced help can handle the package just as fast as experienced and is cheaper on an hourly basis. This is most important since experienced help will be almost impossible to get in the apple-packing centers this year.

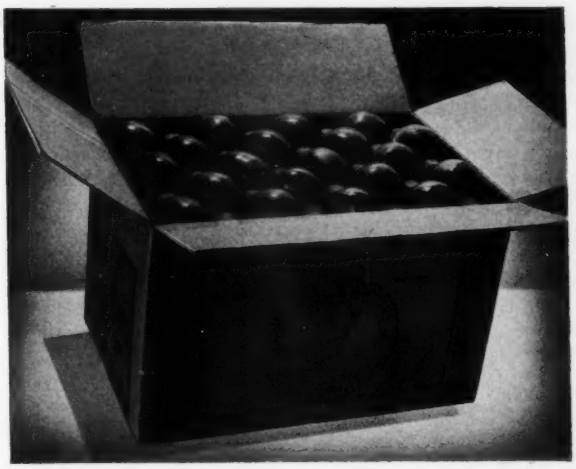
The trays unfilled are very light and take up very little warehouse space, because each fits tightly into the other when they are stacked. They are easy to handle since each loaded tray can be picked up with all the apples in it and placed in the shipping box in one operation.

Since the trays are made from news pulp and ground wood, the supply of raw materials is fairly plentiful. Since large quantities of the trays can be made at high speed it will be possible to supply a large portion of the packers for the 1943 crop. Many Eastern growers in Virginia, Maryland, Delaware and New York State are watching this development closely and before the end of the season, many Eastern apples will probably move in these containers also.

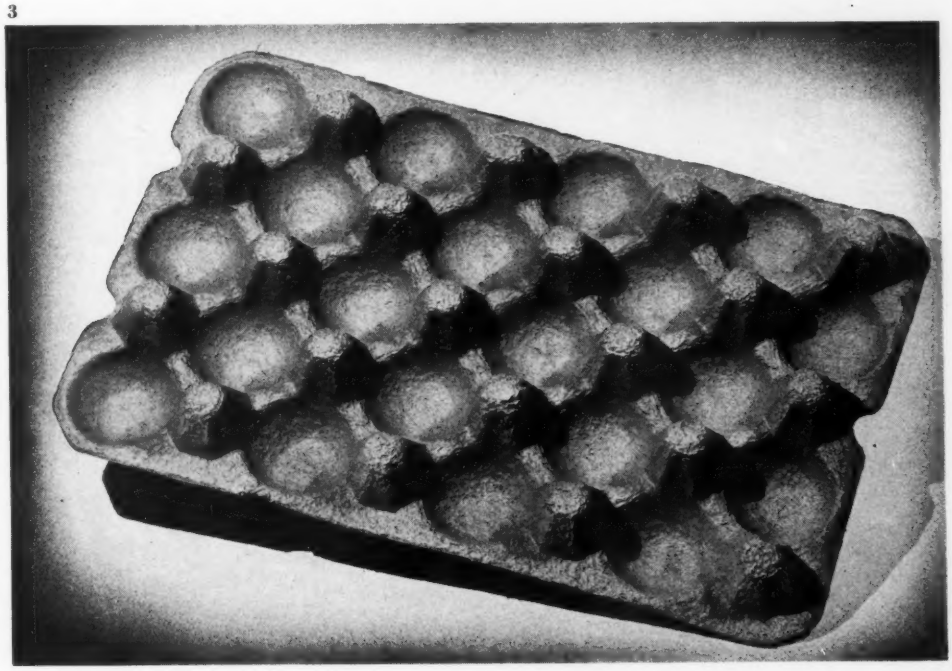
If, as it is claimed, these new trays help in the control of scald and reduce bruising, this new method of packing should be one of the greatest advancements in the ways of packing apples since the turn of the century. The waterproofing of the trays makes it possible for such packs to stand up over long periods under refrigeration and in storage, where moisture has always been a troublesome factor.

Credit: Trays, manufactured by Mapes Consolidated Mfg. Co., Griffith, Ind., under license by Friday Pack Co., Portland, Ore.

2



3



1. Shipping container slit to show how apples fit in new moisture-resistant, oil-sprayed trays. 2. Corrugated shipping box comparable to standard Northwest box of wood. 3. Detail of tray shows individual nesting for each apple. Each piece of fruit stays in its original position and cannot touch its neighbors when packed.

Water purification and test kit

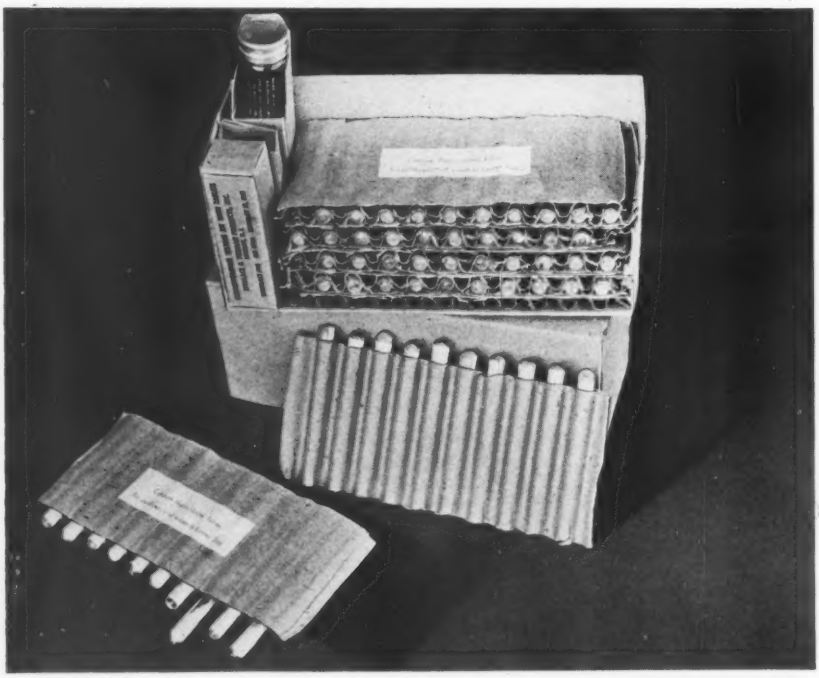
To facilitate the entire operation of purifying water and testing for chlorination, a new package has been designed by the Quartermaster Corps, in collaboration with the Medical Corps, Marines, the Navy and several industrial chemical companies. The new package is a simple, compact kit which holds 100 vials of calcium hypochlorite, for purifying the water, and two tubes of orthotolidine tablets, or enough to test all the water that can be purified by the 100 vials of calcium hypochlorite in the kit.

Particularly inventive is the method of packing the vials. It was necessary in the beginning to find a method that would not involve too bulky materials and at the same time would afford adequate protection for the glass vials. The end result had to be a compact, convenient and secure pack. It occurred to someone that the vials would fit into the flutes of a piece of corrugated board. It was tried and it worked. The vials are $2^1/_2$ in. long by $^3/_8$ in. in diameter. The diameter of the tubes was just right for slipping into the flutes of board whose corrugations measured about that depth. The board was then cut in strips about $2^1/_2$ in. wide with 10 flutes to the strip, so that 10 vials could be inserted in each strip. The packing is done on a manual line. Ten units could be packed to the kit, making up the necessary 100 vials that were needed.

The vials, filled with the calcium hypochlorite powder, are clear glass and are heat sealed at the ends. After the vials are placed in the corrugated strips they are simply stacked, one strip on top of the other, without any other protective wadding or packing between them. It has been found that the corrugated board provides all the necessary protection for the glass vials insofar as interior packing is concerned. They fit snugly enough in the flutes so that there is little danger of their falling out, besides there is enough springiness to the corrugations to hold the vials tightly, once they are in place.

The second part of the handy kit contains the tubes of tablets for testing the chlorinated water. The tablets are packed in a nested double tube to save space. The inner tube is of glass and contains 50 orthotolidine tablets. The outer tube is of plastic and serves as a test tube for the actual testing operation. The clear glass tube is ceramically coated in black with white lettering for the instructions on how the tablets are to be used. These glass tubes are hand filled, then passed along the production line to a weighing machine where the correct content of 50 tablets is ascertained by weight. The closure is a screw cap, cadmium plated, with a cork and vinylite liner.

The outer tube into which the glass one fits is made of transparent cellulose acetate. It has a three-quarter inch transparent yellow band at the top, showing the exact color the water should have when tested after the chlorine treatment. The band of yellow is painted on with lacquer. The color of the lacquer is kept constant for all the tubes by comparing with a bottled sample of liquid color standard. The plastic tube has the same kind of cadmium-plated closure as the glass tube. This type of closure is used because the cadmium is particularly resistant to corrosion. In the testing operation, the outer tube is filled to the lower edge of the yellow band with the chlorine-treated water and a tablet dropped in it and allowed to dissolve. If the resulting color of the liquid in the tube is lighter than the color of the yellow band, the water needs more treatment with the purifying agent, while an equal or slightly darker color indicates the water has been satisfactorily purified and is safe for use. If the liquid turns an orange color, the water is too heavily



The complete kit which holds all the equipment for purifying and testing water. Tablets of orthotolidine come in the nested double tubes shown in the carton. Two of these units are placed in each kit. Vials of calcium hypochlorite are packed in the flutes of strips of corrugated board. Ten of them come to a strip and 10 strips make up those in the kit.



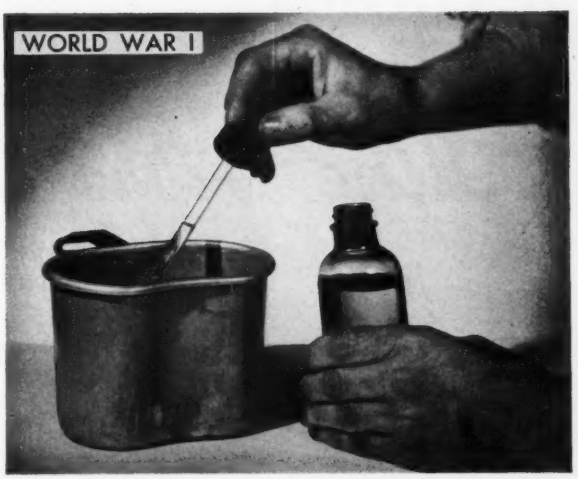
Right. The black tube holds 50 orthotolidine tablets. It, in turn, is placed inside the plastic test tube, shown at the extreme right. Note color band around the top of the test tube. Below. Method of testing water during the first World War. Compare with the simple, compact package above.

treated with the purifying agent and more untreated water must be added to the supply being tested.

With the new test package, it is possible to make a positive identification of the color for correctly treated water. In the former method, the resulting color of the liquid was estimated without benefit of a comparable color such as the yellow band around the outer plastic tube. The new unit also makes testing easier and permits a more exact test under all circumstances. Two of the nested tube units accompany the 100 vials of calcium hypochlorite in their corrugated strips. The tubes are placed in two small folding cartons, having the necessary identification on one side. The two cartons and the strips of vials are placed in a folding carton.

This handy kit, which today's soldier uses to purify and test the water that must be used in the many far-flung outposts of the battle front, is a great improvement over the package of World War I. Then what was used could scarcely be called a package at all. The man responsible for testing the chlorinated water assembled a number of items to be used in the testing operation. His canteen cup served as a test tube and he filled it with about half an inch of water which had previously been chlorinated. He then took a 4-oz. bottle, containing liquid orthotolidine and measured one cubic centimeter of the solution from a calibrated dropper into the water in the canteen cup. Orthotolidine is a chemical reagent which produces an intense yellow-green color in the presence of chlorine. Thus, if the man found the water in the cup had turned what he thought was the right color, he assumed that the drinking water had been sufficiently chlorinated and was fit to drink. There was considerable guesswork involved in this method and there was no integrated pack where all the items needed in the operations of purifying the water and testing it could be found. The large bottle of orthotolidine was not easy to pack for quick usage and it was very liable to breakage. If the solution spilled over clothes or equipment, it damaged them.

It was evident that no method such as this could be continued during this war. Consequently not only the method of testing has been simplified, but the entire operations of



water purification and testing have been made easier. One of the companies which worked in collaboration with the officials of the armed forces and has played an important role in bringing about the new development is Wallace & Tiernan of Belleville, N. J. For many years Wallace & Tiernan have been leading makers of water purification systems and creators of methods for testing water. They are among the suppliers of the new package and F. G. Merckel of that company is responsible for much of the progress made in its development.

Development of orthotolidine in tablet form, together with the design of the package to contain the tablets and the vials, has the double advantage of permitting both purifying and testing equipment to be contained in a small, compact kit. There is little danger of breakage or spilling and the package itself conserves vital shipping space to overseas theatres of operations where every drop of water must be purified before use.

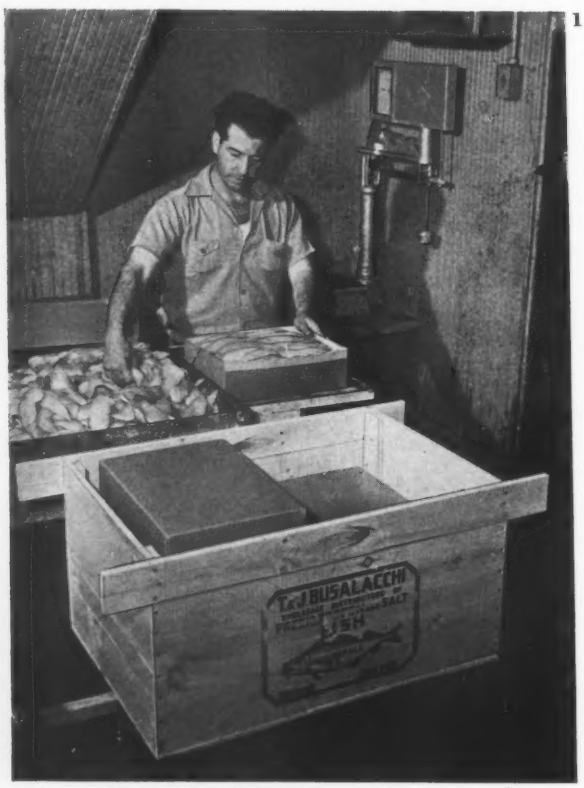
Credit: Tablet bottles and ceramic labeling by T. C. Wheaton Co., Millville, N. J. Plastic test tube, Celluplastic Corp., Newark, N. J.

This worker holds one of the stitched fibre containers and one of the 2-lb. metal cans which has been replaced by the new package. Stacked back of her are the new fibre containers being used.



FISH PACKERS

Like Fibre Containers



1

Last October, when no more metal was available for the fishing industry, fish packers had to look to other materials for the packing and shipping of their salt sea products.

The need was urgent for a tough, moistureproof, watertight container to replace the former tin-coated steel containers which were no more, since Uncle Sam needed the metal for war purposes.

Edmund L. Dunn, president of the Boston Fish Pier Exchange and treasurer of the Fish Pier Box Co., not a manufacturer of boxes, but an organization which purchases and assembles container materials for the group on the fish pier, was called upon to investigate the possibilities of alternate materials.

Fibre container manufacturers were called in to submit samples of their products. After extensive tests of many different types, the box selected as "the best one for us" has now been adapted by some 42 packers of fish and fish fillets, and is saving about a million pounds of metal.

At the same time, this project has opened up a whole new vista of opportunities for handicapped workers by the successful employment of blind operators for assembling the boxes.

The box finally selected is .040 bleached waxed kraft, laminated chipside with brown kraft paper and has been treated with paraffin bath on both sides.

These boxes are made in 10 lb., 20 lb. and 30 lb. sizes, and all have square corners for greater space. Bottoms and tops, shipped flat from manufacturer, have crease impressions for easy folding, which is done by the jobber in the heart

of Boston's age-old waterfront district on Northern Avenue.

The laminated bottoms, waxed inside and out, feature end flaps which fold into an inverted "v" so that when the tops close down over the outside bottoms, automatic locking devices in the form of strong tabs fold under and lock into place in the bottom "v" folds. These bottoms, when properly folded, are machine stitched with four steel staples at tops of each end.

The container tops, stitched in the same manner as the bottoms, are folded the same as the bottoms except that the inverted "v" is folded inside. The fibre tab locking device is really part of the box, itself, being a 1 in. wide extension which runs along the entire top of both ends for the folding-under feature.

Inside dimensions of bottoms of the 30 lb. containers, the largest-sized boxes are $14^1/_4$ in. long by $10^1/_4$ in. wide by $6^1/_4$ in. deep.

No printing is done on these paraffin-coated containers. All printing and brand advertising are saved for the large wooden cases in which the laminated fibre containers, fish-full, are ultimately shipped.

Used both for wholesale and retail use, the watertight cartons are shipped, fully assembled and empty, in carload lots to distant packers "as far south as Hampton, Va., also in New York, Pittsburgh, points in the state of Maine and other places."

Orders for the moistureproof cartons warrant assembled production at the rate of thousands daily.

The U. S. Army is using this type of container extensively for shipping fish in filleted form to army posts throughout the country.

"And the funny part of it is," said Mr. Dunn, "the Army can have tin if it wants. Only, they aren't using it. They are patriotically foregoing the privilege and are themselves cooperating in their own war effort by using non-metal containers. There have been no complaints either. In fact, army officials have stated that they are satisfied with the laminated fibre cartons—satisfied in every respect."

One of the large wholesale fish packers at Boston's fish pier, T. & J. Busalacchi Co., was called upon to verify satisfied adoption of the new box. Anthony Busalacchi, co-owner of this concern, made the statement that the stitched fibre container filled his needs quite satisfactorily and went ahead to prove how satisfied he was by voluntarily demonstrating his actual use of the box.

First, a sheet of wax paper is placed down in the box bottom. Then fresh fish, or fillets, are hand-loaded into the box. When the box is filled, another sheet of waxed paper is placed over the fish. Then the container top is clamped down and locked into place by means of the self-sealing tab.

"These boxes," remarked Mr. Busalacchi, "provide as good, if not better, protection than the metal tins. Their use requires no machinery for filling and, so far as I am concerned, neither do they necessitate changes in labor or equipment. The procedure is as simple as the former method and, what is much more important, they cut my packaging costs from 20 to 30 per cent."

After the fibre boxes are filled and clamped tight, they are placed in wooden cases. Ice is packed around the fibre containers and the entire iced case is then ready for shipment In this fashion, with a saving of metal already estimated at millions of pounds, the industry now ships its fish to consumers far and near.

1. Filling the paper-laminated container with filleted red fish. Container top, shown at left, will clamp down over bottom and lock into place by means of raised tab visible in photograph. 2. Thirty-lb. fibre containers are packed by half-dozens in these large wooden cases, iced and sent on their way. Fibre cartons have saved government millions of pounds of metal formerly used for this type fish container.

2



The Suffolk Farms Packing Co. of Revere, Mass. and the Veg-Packing Co. of New York use these containers for packing and shipping frozen rhubarb. Other packing uses are anticipated and all signs point to permanent adoption of this type of economical box postwar.

One large fibre box user, a well-known grocery house, put the new package to a severe leakage test prior to acceptance. Some ten or a dozen of the fibre containers were filled with fresh fillets and the fillets shipped, unwrapped, with the cartons floating in salt water—from Boston to St. Louis. Outlet stores in the Missouri city reported that the fillets came through OK, that on the whole they were received in excellent condition.

Where these fibre containers are folded and stitched, an interesting and a dramatic side of this story is gleaned from Mr. Dunn's experiences with blind people employed in actual folding and assembling operations on the new laminated fibre containers.

Mr. Dunn wasn't sure at first that this experiment would work. He knew that the folding procedure was a comparatively simple operation. All you had to do was fold along the indented lines—lengthwise twice and sideways, then the four corners.

The girls certainly had found it an easy matter; but manpower was scarce, very scarce, and he needed the girls to run his dozen stitching machines which sewed lightweight steel stitches into the fibre cartons at a rate of 230 staples per minute.

About the time it became necessary to look for more help, Dunn heard of the disbanding of WPA. Coincident with this development, a Boston newspaper carried an article about blind people being put out of work as a result of the government's departmental breakup.

In Mr. Dunn's own words: "I didn't see why I couldn't use them here on our work, so I made known my feelings. Accordingly, the newspaper put me in touch with the Catholic Guild for the Blind, and Rev. John J. Connolly, who is in charge, came right over with a blind girl. He tried her on the folding work and she did so well that I asked for four men."

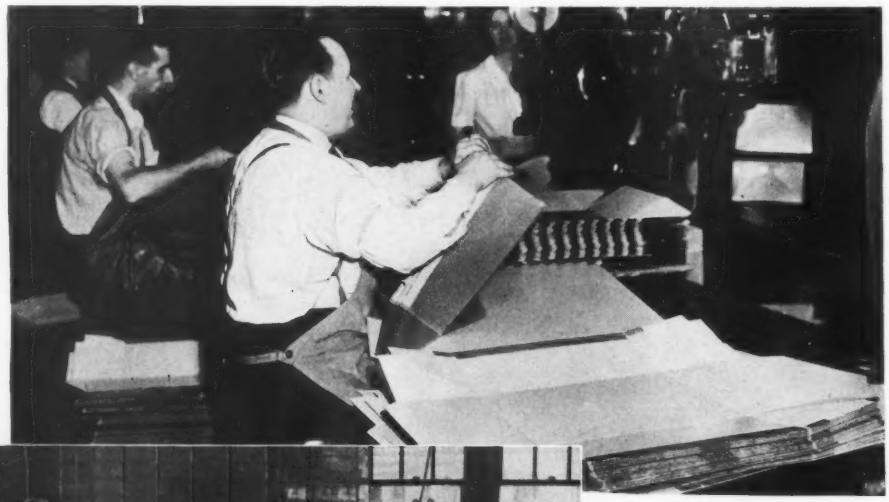
"Those men," he continued, "took to the work so quickly, were on the job every day so promptly and were so willing to work, that I called for two more. Now there are six of them here in all. I think they like it, too," he added. "You can determine that angle for yourself, if you want to."

The writer approached these young blind men and talked with them. They were glad to be there working to prove to the world in general that the blind are by no means handicapped, that, given equal opportunity, they can assume their rightful places among the ranks of hard-working Americans.

To see them, taking not one, but four, five and six of those flattened, rugged, heavily-waxed fibre containers at a time and folding them at once with quick, strong muscular flourishes, you could hardly class them as handicapped.

These men, folding the new cartons and passing them to the girl stitchers, were typifying the theme of Karsten Ohnstad's best-selling book "The World at My Fingertips" to the effect that, given an opportunity, the estimated 40,000 employable blind people throughout the country, can give their sighted cousins a run for their money.

Said Lester Stott, one of the (*Continued on page 100*)



Blind operators folding laminated fibre containers for packing fresh fish and fillets. Folded cartons are passed to machine stitchers in final quick assembly.



Women employees easily stitch containers on stitchers which are set to drive 230 staples a minute. This is the final assembly work on the fibre containers.



Kraft envelope at right is wartime package to replace brown printed white paper envelope at left. Kraft saves large quantities of paper, provides brownish background for dark brown printing. Design identity is retained.

Brown kraft for the duration

Like other companies faced with the need of conserving paper, Real Silk Hosiery Mills, Inc., began looking for ways to reduce the amount of paper required for approximately 5,000,000 merchandise envelopes they use for packaging hosiery.

Instead of white paper, the company will soon use envelopes of brown kraft. By this move, they will save approximately 20 per cent in paper weight, tremendous quantities of printing ink and at the time show a cost saving of about $6,500. Because of the greater strength of the kraft paper, they claim that the lighter weight paper provides just as good protection.

In 1941 this company adopted a lacy fern pattern printed in reverse brown on white paper, so that the design was revealed in white with solid brown background. This design was an All-America Package Competition winner. The company chose it as an appropriate solution to their requirements for a package that would be equally suitable for packaging men or women's merchandise. Through its direct-to-consumer-sales organization, the company sells men's ties, socks and shirts as well as women's hosiery, lingerie and dresses. Therefore, to use the same package on all and to benefit by the savings such a family package makes possible, the design had to be one styled for all purposes. Because of the company's direct selling program, display value was not so important. However, proper presentation of the product on delivery through the mail, the company knows, has an important bearing on repeat business and is therefore very particular about the packaged appearance of its merchandise.

In making the change from white paper to the wartime package, the company was thus anxious to retain in so far as possible the family identity of the brown package that they had found so successful in 1941.

They use six different sizes of envelopes for hosiery, due to the different weights of hosiery. Their previous envelopes were made of 25 by 38—100 lb. basis weight white paper, or equivalent to 24 by 36—92 lb. basis weight. This was printed in solid ink.

By changing to brown kraft, 24 by 36—80 lb. basis weight, they have provided a brownish background without the use of ink. All that remained to do was to print the fern design, trade and product identification on the background. The new package does not look quite so elegant as the original one, but it is an excellent solution to the wartime paper conservation problem and at the same time keeps the now well-established trade design of Real Silk before the buying public until such time as the company may go back to the original package.

To save even more paper, the company is experimenting with a still lighter weight paper and if it proves satisfactory, they may even go to a 70 or 60 lb. basis weight. This would mean further savings in weight and approximately $1,300 saving in cost on the 70-lb. stock and $2,500 on the 60-lb. stock.

The company believes that at the present time every consideration should be given to using the lightest weight paper possible that will give proper protection to the product. Every pound less weight also means just that much less weight going through the mails. This represents not only a substantial saving in postage costs to the company, but a substantial reduction in bulk through the mails, which is so important when every cubic inch of transportation space is needed.

DESIGN HISTORIES



Plaster of paris

To the casual observer, a package designed like a canteen quickly identifies itself with soldiers and sailors. In this war, however, women are in the Army and Navy, too. Robert B. Karoff Creations, Inc., has a cologne which both men and women like, so they decided on the familiar canteen as a container. A clear glass bottle was molded in the shape of a canteen, then a composition of plaster of paris and pulp was applied to this bottle. Application is made without firing, avoiding glass breakage.

To carry out further the impression that the package is a replica of a canteen, there is a cord attached to the container on either side. A tag on the cord, in the form of a shield, has product and brand identification. The closure is a plastic screw cap in mottled tones, made of left-over scraps of urea.

Folding cartons in brown and blue have all-over patterns showing sailors, stars, WAACS soldiers, tanks and other illustrations associated with the war scene.

Credit: Bottles, Swindell Bros., Baltimore. Molding of plaster of paris composition, Magnani Statuary Corp., New York City. Closures, Colt's Patent Fire Arms Mfg. Co., Hartford, Conn. Cartons, Federal Carton Corp., New York City.

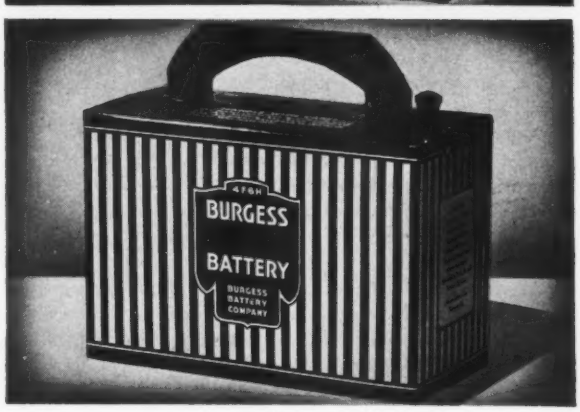
Battery in paper

In the top photograph is the old, familiar Burgess ignition battery in a metal container with a leather handle. In the main, Burgess batteries have always been packaged in paper tubes or in die-cut folding boxes, which necessitated no changes because of wartime restrictions of material. The exception, however, was this ignition battery, which had always had a metal case.

The ignition battery is widely used in rural areas on ignition systems and to power electric fences. Governmental restrictions prevent the use of metal containers for any batteries except direct military items so Burgess had to find a substitute. In the photograph below is the company's wartime replacement. The battery is encased in a container made entirely of paper. It is equipped with a self handle which very nicely replaces the metal container with the strap handle, formerly used. In appearance the two are very much alike. There is the same bright awning-like stripes and black tops and bottoms. Brand and product identifications are set in much the same design as that used on the former container. However, there are panels of additional copy on the new one. On the top is the warning to handle with care and an explanation of the change. "The metal container previously used on this battery has been replaced with this paperboard box to conserve critical war materials," is the statement.

A number of merchandising pieces go out to dealers to be given to consumers. One of them tells how to care for the battery properly since "This may be your last one!" Another piece is slipped on the battery knob and also emphasizes the kind of care the battery should get if it is to last.





Paper cigar box

Economy as well as a saving of essential materials and labor was effected when the manufacturers of Ruskin cigars switched from the conventional wooden cigar box to the folding carton shown here. The boxes are shipped knocked down to the cigar factory, but setting up does not take any special machinery or equipment.

They are printed in four colors, die-cut, then folded and glued so that the top and bottom pieces are double strength. Standard boxboard is used, but ingenious folding and gluing give the effect of double weight board on all four sides, top and bottom as well as the effect of double-side printing. The former wooden box was the usual type with a lithographed label in gold and other colors. The present box has but four colors and a rich yellow gives the effect of gold ink.

Affixing the U. S. Internal Revenue stamp provides the seal for the box. As in all cigar packing, these boxes, when fully loaded, are placed under moderate pressure and this results in keeping the contents relatively flat and the hinge cover in position. However, because the paperboard box is not nailed and the cover does not have the rigidity of wood, pilferage of the cigars would have occurred. This was overcome by the addition of two cardboard covers inserted as shown in the photograph. These fit over the cigars and prevent easy pilfering without opening the box and consequent destruction of the revenue stamp.

Ordinarily, wooden cigar boxes are nailed at one or more points and then securely taped around three sides—the fourth is hinged—to give moisture protection to the cigars. However, adequate moisture retention is given in the new package through the individual wrapping of Ruskin cigars in cellophane. Taping has not been found necessary.

Credit: Folding boxes, Robert Gair Co., Inc., New York City.





New sea packs

Two more applications of the heavy kraft laminated to lead-foil and cellophane packaging are the waterproof envelopes enclosing a New Testament and two signaling mirrors, placed aboard the life-boats and life-rafts of every merchant, fighting ship and every flying fortress. The pair of signaling mirrors is an important piece of equipment which consists of rectangles of chrome-steel, about 5 in. by 7 in., with two holes, one in the exact center, the other at one of the corners. The central hole is used to sight the object being signaled and the corner hole to tie the mirror to the survivor's wrist or to the float, so it will not be dropped overboard. Two of these mirrors are packed in a kraft-and-leadfoil laminated envelope, heat sealed with an asphalt compound. The mirrors are, in addition, smeared with a heavy cosmoline type of grease to insure against corrosion and to retain a clean, bright surface for signaling. A set of directions for use of the mirrors is wrapped in each envelope. The instructions are folded within a heavy oiled paper covering to protect the printed sheet from the grease-coating of the mirrors.

The New Testaments are being distributed by the American Bible Society to the Merchant Marine and the Navy. These Testaments are also placed in waterproof envelopes aboard lifeboats and rafts. They are wrapped in heavy kraft laminated to leadfoil and cellophane and heat sealed for moisture-proofness. Officials state they have been swamped with orders for the "waterproof Testament," but that these cannot be supplied to individual servicemen. They are distributed solely for use on the life-saving equipment.

Credit: Envelopes, Reynolds Metals Co., Richmond, Va.



All glass with tie

For years the black jar with black metal screw cap and silver, black-lettered label has been an old standby for The Vita Ray Corp.'s face cream. But the jar had to be ruled out, not because it was impossible to obtain the jars, but because the type of closures used was unobtainable The company decided to make a radical change. They selected a glass jar which had a glass lid. The little jars closely resemble those in which jams, honey and jellies often come. Inspiration for their selection, however, came from a Lowestoft tea caddy of about 1790 vintage. It was all-china, including the mushroom-like cap. Designs painted on the china were usually done in pink or blue. The tea caddy upon which Vita Ray based their design was painted in pink. In developing the pattern for use on their wrap-around label, they chose the garland effect so often found in Lowestoft china and then had it printed in the pink and blue combination.

How to keep the glass lid on had to be carefully thought out, as well as some kind of packing between the lid and the jar to prevent breakage of the glass and leakage of the cream. Disks of crepe paper and small disks of glassine, with the latter next to the cream, are placed between the jar and top. Then the top is held on securely by a silk-like cord which is tied around the finish of the jar and over the top and around the tiny glass knob on the lid. The tying is so ingenious that there is little chance that the top would come off or the cream ooze out. According to the company, consumers not only have accepted the new package, but have reported their preference for the new container and its design. It is a package with definite feminine appeal.

DESIGN HISTORIES

Turpentine bottles

More than three months' experience by the Hercules Powder Co. in distributing distilled spirits of turpentine in bottles has disclosed that the new method of packaging is better than had been anticipated in the industry. While stating that the bottles are not as effective as cans since the former can break, the glass, the company says, nevertheless, makes an acceptable wartime substitute. There is no spilling, no wasted gallonage, no fussing with second-hand containers, no extra expense for lids, corks, funnels and no time lost in the handling, according to the company, in contrasting the distribution of the bottles and jugs with that of the previously used drums.

One advantage of bottled turpentine is that in clear glass bottles, the water-white color can be seen by the customer, showing that the material is clean and fresh.

Bottled turpentine is available in cartons of 24 pint bottles, 12 quart bottles and 4 one-gallon bottles. The bottles carry the same orange and black labels which have appeared on the cans.

Hercules was among the first companies to sell turpentine in small containers, having distributed their naval stores product in cans for something over 20 years. Distribution in bottles, plans for which were made as soon as a tin shortage appeared imminent, began in small quantities. Substantially all packaged turpentine is now being distributed in bottles and adequate supplies are in the hands of the company's many dealers throughout the country.

The company has over 75 warehouse stock points in the United States and this makes possible quick delivery of the packaged turpentine in almost any part of the country.

Credit: Bottles and caps, Hazel-Atlas Glass Co., Wheeling, W. Va.



Cold cream war cap

New caps for Pond's cold cream are made of heavy non-priority molded fibre. Contrast in appearance between the former metal one and the new one may be seen in the photograph—metal on jar at the top and fibre on jar at the bottom. The cap is a light green in color, though the color may vary, and it has straight sides. It has a board and vinylite liner. There is no brand identification on the top as in the old cap.

The new caps, Pond's states, have proved efficient in keeping the creams fresh, but they are not as durable over a long period of everyday use as the metal ones. The cap is resistant to grease and do retain a fresh appearance for a time, but they will smudge after the user has given the cap pretty constant handling with fingers coated with cold cream. Caps are of the continuous thread, screw-on type just as the metal ones were and in this respect are just as convenient to use. Before adopting the cap, Pond's made many tests in order to be sure that the closure would be satisfactory under all conditions. It does hold the seal and continues to hold it after long and even rough usage. It handles well in the production line and has not necessitated any radical adjustment in the line.

Because the caps have to be made on a toggle press, the production is limited since this process is not high-speed. Pond's uses such a vast quantity of closures that production must necessarily be extremely high in order to satisfy the need. Thus, in the change-over period from metal to fibre caps, Pond's has suggested to all its customers that they save their present Pond's metal caps or the plastic caps for reuse. They have also informed women that the appearance of the new caps may vary, that dyes may take differently on the new material. Pond's promises that no change will be made in the product to conform to packaging restrictions.



Credit: Closures by Compo-Site, Inc., Newark, N. J.

DESIGN HISTORIES



All-fibre lap-seam can

For the 5-lb. and 10-lb. sizes of Calumet baking powder, General Foods Corp. is distributing this all-fibre lap-seam can. It has a reclosure top which was developed to protect the baking powder after an opening is cut in the semi-circular scoring in the permanent top of the can.

There has been general acceptance of the package, according to the company. It ships and handles well and provides a shelf life that has proved satisfactory, though, of course, not as great as that of metal cans. Before the war several of the baking powder manufacturers made their own all-metal cans, ranging from the 8-oz. to the 10-lb. size. Since the war, however, practically all of the baking powder industry has discontinued making their own cans because of restrictions in the use of metal and equipment to produce metal and fibre, or all-fibre cans.

The all-fibre lap-seam can is a fairly recent development for general usage with a rather wide range of products. One of the products which is packing successfully in these cans is baking powder. Restrictions on metal are such that the larger size cans are required to be all-fibre and if it is found that baking powder packed in the larger cans does continue to hold up well, no doubt there will be considerable post-war usage for these particular types of cans for this product.

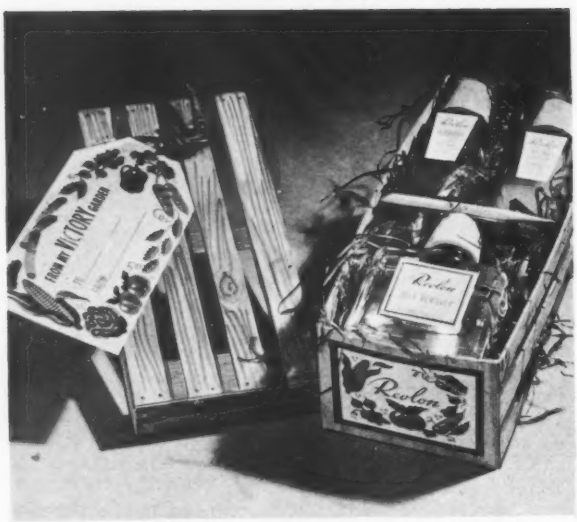
For the smaller sizes of Calumet baking powder another kind of can is used. The smaller sizes hold 16 to 22 ounces of the product. The containers have fibre sides, but the ends are made from scrap metal. In appearance there is very little difference between this container and the metal one.

Credit: Fibre cans, American Can Co., New York City.

Showcase garden



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It was time for the June promotion campaign at Revlon's. Each year the company has prepared its new packages and the promotion for them to be released in June. A timely theme had to be considered, first of all, around which both package and promotion could be developed. Arthur G. Alter is responsible for the designing of new containers for Revlon products and for their presentation at the point of sale. It was up to him to think of a good workable theme, one that would be current and topical, but which would not be dated at the time of release.

He did not have to search long to find a topic that everybody was talking about. It was a topic, too, that would concern a good many people all summer long. That subject was victory gardens. As a theme it possessed all the elements for the creation of interesting packaging and for presenting the products in eye-catching ways in department stores and specialty shops.

The thematic treatment having been settled, the next problem was to work out a practical container for a three-item assembly of Revlon nail preparations—polish remover, base coat and polish. Wheelbarrows, bricks, garden hose, seed packets, trowels, crates—all these were thought of as having some association with victory gardening. The only one of the items, however, which might be turned into a good package was the vegetable crate. The other articles could be changed into amusing containers, but they would be impractical, expensive to manufacture and probably not handle well in shipping and in the stores.

The vegetable crate was decided upon and suppliers were sought who could produce the tiny crate in paperboard. The container had to be inexpensive, since the item was to be popularly priced. Manufacturers of both set-up and folding boxes told Revlon that it would be impossible to make early deliveries—some of them were already months behind on orders. Then how about lithographers, thought Revlon. Stock used for display posters and other display material could be substituted and the little paperboard crate could be lithographed to look like wood. One or two lithographers were consulted and they could do the work, but it would be very expensive, they said. They were not equipped to produce that particular type of unit in great quantities, lithographing would be expensive and, besides, they might have to wait weeks for delivery of the necessary amount of paper stock. Revlon apparently had reached a dead end. Either the company would have to place an order for nearly half a million packages with box makers who might have them ready weeks or months hence, or the search for containers

1. ***Complete new Victory garden package for the Revlon nail preparations. The tag makes it convenient for the purchaser to use the package as a gift.*** **2.** ***The three bottled preparations are protected by a bed of shredded, green glassine. Orange stick and small sandpaper nail files are placed crosswise of the box, thus giving the effect of the center partition in a real crate.*** **3.** ***This is the sample kit which the salesmen take to buyers. The kit itself is made of wood and is a replica of the package within. Simulated vegetables are arranged inside the kit to give an interesting effect and a realistic appearance.***

would have to be continued in generally unthought-of quarters. It was decided to continue the search.

Then Revlon had an idea that perhaps printers might have stock on hand for which they had no immediate need. Mr. Alter went to the head of a large printing plant and asked him if he did not have some paperboard on hand that could be adapted to the making of a box. The printer thought for a moment and then suddenly remembered that he did have some paper stock he had bought awhile back when there was plenty of paper. He remembered he'd got it for a particular printing job and then for some reason or other, the stock wasn't used.

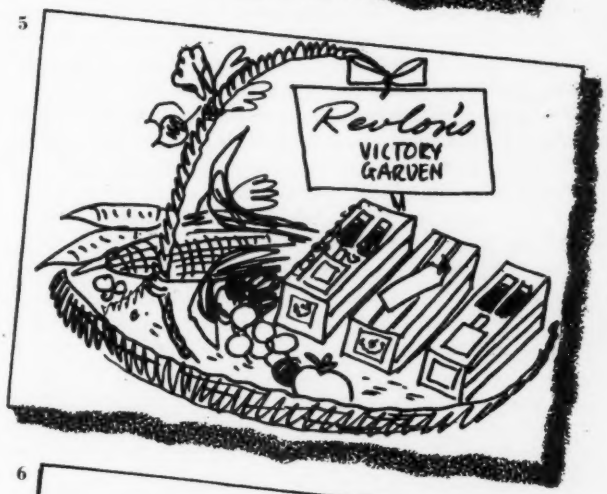
The two men had a look at the paper. It was good, stiff folding box stock, 30 pt. board. There was enough of it to fill the Revlon order. When details were worked out with the printer, it was found that the printing plant could print the sheets to resemble wood, with full color for the vegetables shown on the label ends and, at the same time, print the small gift tag which was to be tied to the vegetable crate. Then the printed sheets would be sent to a mounting and finishing service where the sheets would be die-cut and pasted to form the crate-like containers. The mounting and finishing service was found that could do the job and in three weeks, containers for Revlon's Victory Garden three-item pack were being delivered. The improvised method of manufacture added but very little to the cost of the package. The pasting of the crate so that it makes a set-up box, although cut from folding box stock, is done by hand. The mounting and finishing service finds that the work is very simple and could very well be performed by handicapped people. Revlon feels that its search in out-of-the-way places for material and discovering unusual methods for obtaining containers at a time when many of the regular channels are being employed in essential war work may be of help to others. No doubt there is considerable unused paper stock which may have been forgotten in printing and similar plants throughout the country. It could be adapted to the making of containers for many different items. By using methods that are out of the ordinary, work may be given to those who have not been taken up in the rush of war industries.

The finished paperboard vegetable crates are going to be allowed to be their own promotional pieces at the point of sale, according to Mr. Alter. There are to be no special display units distributed. Chief reason for this is the fact that department stores and specialty shops where Revlon products are sold, for the most part, prefer to create their own counter and window arrangements. A talk with a prominent New York department store display man put Revlon on the right track in regard to the type of displays stores would like for counter or window. A mimeographed bulletin was brought out, which illustrated Revlon's new Victory Garden packages in attractive arrangements in windows and on the counters of special sections of department stores. Garden clothes, for example, were shown with the (*Continued on page 108*)

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4. The three sketches shown are from the mimeographed promotion and display suggestions that Revlon sends out to department stores for their display people. The scarecrow is made from square wood strips, raffia or shredded paper and a carrot for the nose. Real vegetable crates are placed beside the scarecrow and the Revlon packages grouped about. 5. A basket filled with stuffed vegetables of crepe and the packages made a good counter treatment. 6. In another counter arrangement, a large farmer's hat and gardening tools provide an amusing background, together with berry boxes, for the Victory Garden sets.

Outlook for containers and closures

As revealed in panel discussion at T.G.A. Convention

The panel discussion on packages and closures at the annual meeting of the Toilet Goods Assn. in May covered so many current questions applicable to packagers in other industries, that Modern Packaging presents herewith a complete report of these proceedings.

"I will make a bet that this is the first time in the last six months that anybody in this audience has seen so many suppliers!" said S. L. Mayham, executive secretary when he introduced the panel leaders.

They were: Alfred F. Brady, Hazel-Atlas Glass Co.; B. Franklin Conner, Colt's Patent Fire Arms Mfg. Co.; Richard M. Krause, Richard M. Krause, Inc.; J. H. Patterson, F. N. Burt Co. Ltd.; Frederic Remington, Peerless Tube Co.; L. R. Root, Scovill Mfg. Co.; C. H. Vanderlaan, Vanderlaan Tile Co.; and Karl Voss, Karl Voss Corp.

As chairman, Mr. Mayham posed the questions.

Question: Will blackplate be available for closures at any time during the next year? If not, might there be sufficient metal to produce the threads for wood, paper and other substitute caps?"

MR. ROOT: Well, as far as blackplate is concerned, metal of any kind from the best information I can get, is not going to be available. Now, all of you have heard that there is plate frozen here and there, but I think it is going to stay frozen, or, if they do release any of it, I think it will go into essential civilian use, and not for any use that we could hope to put it to in this Association. So, from the best information that I can get, I don't think we can look forward to having any metal caps at any time soon.

MR. MAYHAM: What about metal for threads?

MR. ROOT: Well, I still cannot find anyone who can give any assurance that plate is going to be released for any non-essential use. On essential use they have given some slight relief, but I have talked to at least a dozen people in the past week, and they can't see any chance at all of plate being released to make a cap of any kind for a non-essential product.

Question: There seems to be considerable confusion both in Washington and the industry with respect to the actual position of paperboard. Can you tell us any of the actual facts surrounding the present alleged shortage?

MR. VOSS: That is a rather difficult question to answer. There are several reasons for it, of course. One is the manpower shortage and the other is the demand made by the Army and Navy for packing materials for critical goods.

I am told that there is a backlog at the mills at the present time—the Eastern mills—of over 135,000 tons of board; that is for box makers. Now, you will have to appreciate that the Army and the Navy are calling upon the board mills for such material.

In the food industry, of course, you have cocoa and gelatin and things of that kind. You also have containers that hold fuses, shells; and then, of course, you also have things like overseas kits and life-raft kits. They contain bandages and drugs and hypodermic needles. In addition to that, you have all these corrugated containers that are used by the Army and the Navy to send critical materials all over the world.

On the manpower side, we are given to understand that last August the mills were held to the machines that were then running, and since then, where the demand has become greater, these men who were laid off are now in other industries.

Question: Several types of paper closures have been developed but they all seem to have considerable disadvantages, especially from the re-closure angle. Do you believe it is possible to produce paper closures with sufficient strength of threads to make satisfactory re-closures? If not, what do you suggest?

MR. PATTERSON: I don't think your problem is to make a closure that would be a re-closure with threads strong enough. They certainly can be made strong enough. They can be made strong enough to stand 50 lbs. of pressure, which is ample. Your difficulty is that there is nobody who has the capacity to make anywhere near enough that kind of closures. There are at least four or five different ones that have been developed, and our capacity on them is increasing right along in the industry, but we still are very far from satisfying the demands. There are, however, several closures that will stand up to, as I say, 50 lbs. on a capping machine.

Question: We have examined ceramic closures but feel there will be considerable difficulty in their application to jars under normal production conditions. Can you tell us how the problem of lubrication to threads can best be solved?

MR. VANDERLAAN: We found when we started to make ceramic caps that one of the main objections of your industry to them was the fact that the threads ground against the glass of the bottle. After a good deal of experimentation on that with the Du Pont Company, we were able to procure a plastic, which is transparent and non-toxic, acid-proof, waterproof and alcohol-proof; and by spraying that on the threads we give a tight and complete closure without any noise whatsoever.

Question: Has there been, or is there likely to be, any limitation due to raw material supplies in the production of colored opalware or colored glassware?

MR. BRADY: I think the answer to that is that there is no scarcity.

Question: We have recently had a little trouble with the adhesive quality of our labels. Are present adhesives as good as those used in the past and are there any new adhesives coming along that will help this problem?

MR. KRAUSE: We have anticipated something like this for some time past, and I made a record here as to just what has happened and I will read the letter from the glue manufacturer:

It is a well known fact that most of the better paste formulas are made from tapioca flour, which supply has been cut off by the war, having come from the South Sea Islands. There are many good substitutes for tapioca, such as cornstarch, dextrine, etc., but the trouble comes mostly from the inferior sizings the paper companies are using, as they are having their troubles in replacing casein and other standard sizing formulas that they have been in the custom of using. It would take too long to go into a general discussion as to how all these troubles could be remedied, but would suggest, where real

trouble arises, for the user to contact his paste supplier and feel confident in most cases many defects can be overcome, as with their vast experience they can tell whether it is the fault of the paper or if the paste has the right adhesive qualities.

Question: How is the tin recovery program working, and is the percentage of tin being recovered sufficient to warrant the continuation of the tube-for-tube exchange? When do you think the tube-for-tube exchange will have outlived its usefulness?

MR. REMINGTON: Since the formation of the Tin Salvage Institute there have been recovered over four million pounds of tin and other metals on tube-for-tube exchange basis. Of that the percentage of tin started with 91 per cent last July. As of May 1 it is now 41 per cent, and shows a declining curve. The entire collapsible tube industry hopes that such a restriction as the tube-for-tube exchange will be removed, and if we were asked to estimate when we think it will be possible to remove such a restriction we would say about nine months.

There are two other factors that may prevent the removal of the tube-for-tube exchange. One is that we are getting in large quantities of lead, which is useful to the collapsible tube industry, and the other condition is that the public having been educated to the tube-for-tube exchange may have it continued by government edict for psychological reasons.

Question: Have screw-type wood closures been developed in which the thread will not strip when subject to usual use? Can these closures be made alcohol-proof and in what volume can they be turned out?

MR. ROOT: Well, I hate to be such a gloomy fellow, but on wood caps, you can make fairly good wood caps, but there isn't enough equipment in the United States to make anything like the number of caps that would be required for any one industry irrespective of a group of industries. The reason for that is that your wood cap has to be made on a high-speed automatic machine. The wood mills have never had any occasion before to put in any vast amount of special equipment for the manufacture of threaded caps. Of course today they can't buy any equipment; so there again you have a bottleneck.

In addition to that, virtually all the mills are running short of wood. This wood has to be aged for some time, and they haven't sufficient men to send out in the woods to cut it any more. After it is cut it ought to be aged at least three or four months to make a satisfactory cap.

You have a shortage of manpower in attempting to get the wood in; you have a drying period and then you have the shortage of equipment on which to run it. I can tell you that there aren't any wood-turners that I know of that really care to run caps in any volume, because it slows up their production.

Question: The shortage of metal has created a vast demand for paper containers for such things as dentrifices, talcum powder, etc. Can paper containers for these products be supplied in adequate quantity without the purchase of considerable amounts of new machinery?

MR. VOSS: No, I don't think so. Many of these substitute containers are, of course, different from the usual line of containers and packages made by box makers. It would require new machinery. Of course, many of these substitutes do not carry priorities—at least high enough priorities—with the result that it is almost impossible to get the machinery. I know that quite a number of concerns have been working on that sort of thing, and a number of them have done a very good job.

There are certain limitations when you are using cardboard, as compared with metal. Cost is an element, and the method of closure is another one. But to answer the question definitely: it is very difficult to obtain the new machinery, even if you have the facilities otherwise for making the containers.

Question: Have any paper closures, other than screw type, been developed, and what are their limitations?

MR. PATTERSON: I don't know that I am an expert on all these paper closures. There are literally dozens of them that are being worked on, but there have been a number of paper closures made that do not have the thread. There have been paper closures made for lug-type packages, for instance, that, so far as I know, are largely used up to this time in the tobacco industry for their tobacco jars. We ourselves have made a closure that is just like the paper drum in your ten-cent face-powder box with a head put in under the paper. For some things it has been found useful.

You can also go further with that and put a sticky, gummy substance on the washer inside and (*Continued on page 96*)

Experts who answered the questions. Left to right: Frederic Remington, Peerless Tube Co.; C. H. Vanderlaan, Vanderlaan Tile Co.; J. H. Patterson, F. N. Burt Co. Ltd.; Alfred F. Brady, Hazel-Atlas Glass Co.; L. R. Root, Scovill Mfg. Co.; Karl Voss, Karl Voss Corp.; Richard M. Krause, Richard M. Krause, Inc.

PHOTOS, AMERICAN PERFUMER







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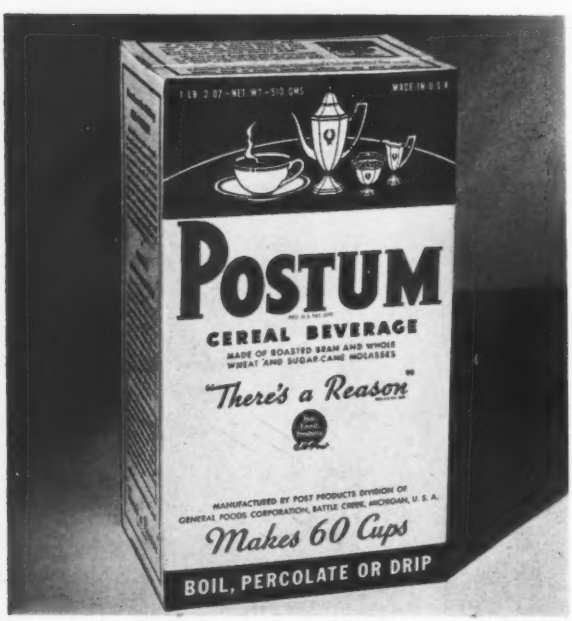


1

PACKAGING PAGEANT



3



4

1 Shocking Stocking, Schiaparelli's answer to the Nylon shortage, is a leg film put up in these "dressmaker bust" bottles. Schiaparelli calls them that because they are made to resemble the forms used by dressmakers. The glass is clear and the exact color of the shades of the liquid can be seen by the purchaser. The 8-oz. bottles have round, brown caps with gold and brown designs on the tops. Molds for the bottles are not new, since Schiaparelli has been using them for some time.

2 Same kind of container, but made of paperboard instead of metal, is a can for Chan floor wax. Tests were made before the container was adopted and it was found that the paper can would stand up during the filling process when the hot liquid wax is poured in. Vapors are retained, which assures that the wax will not dry up and cake. Precautions against evaporation are an impermeable coating on the can itself and a tight friction plug, which prevents escape of vapors under the lid. The label is greaseproof to protect the container's appearance while the wax is being used. The beading at the top of the can is so narrow that it offers no obstruction to removing the wax. Can made by Somerville, Ltd., London, Ontario, Canada.

3 Wrap-around label on a Boston round bottle retains brand identity and consumer recognition for The Canfield Oil Co.'s Valve Ease. The former metal can is shown on the left and the new round bottle on the right. The screw-on closure for the bottle has a label affixed over the closure to insure against pilferage and that the consumer will always get Valve Ease and no other cylinder lubricant in the bottle. The bottles provide easy usage because the lubricant may be poured quickly and the bottle recapped to protect remaining contents. Bottles and closures by Armstrong Cork Co., Lancaster, Pa.

4 The redesign of the Postum Cereal package corrects a fairly general impression among housewives that the product is a prepared breakfast cereal to be eaten with sugar and cream. The new carton emphasizes Postum and minimizes Cereal. Regular users of Postum know the product as Postum Cereal, the company explains, but some consumers—potential new Postum drinkers—were confused by the large word Cereal on the carton. Because of this fact, the package was revised so that the product is now Postum with the descriptive qualification, Cereal Beverage, in smaller type. The carton is made in the Container Division of General Foods, Battle Creek, Mich.



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5 Metal can with sifter top is the old package for Boraxo with the new carton on the right. Reproduction of the old package on the face of the new allows for ready identification. The carton is varnished and the base heavily waxed to repel moisture. Pacific Coast Borax Co., makers of Boraxo, reports that the new package lends itself better to stacking for display purposes than the old and has met with ready consumer acceptance.



6

6 Richard Hudnut calls its new limited item special package the "DuBarry right about face package," because it is a combination type package for the working woman who must have a convenient pack for applying fresh make-up. An attractive folding carton can be used to display the actual packages of regular size face powder and a special size bottle of foundation lotion. The two items sell for the price of the face powder.



7

7 For a number of years, Crosse & Blackwell Co. packed and sold a product identified as C & B Meat Sauce. Then it was decided to drop the somewhat limiting term, meat, and make the title C & B Sauce. To avoid an abrupt change, the company used a transitory step and labeled the product, C & B Thick Sauce over a period of about three months. The type size in which the word "thick" appeared was much smaller than that used for the word it replaced. The change in the label is now complete and the sauce appears as C & B Sauce. No change was made in the bottle. Bottle, Maryland Glass Corp., Baltimore. Caps, Aluminum Seal Co., New Kensington, Pa. Label, The National Color Printing Co., Inc., Baltimore.



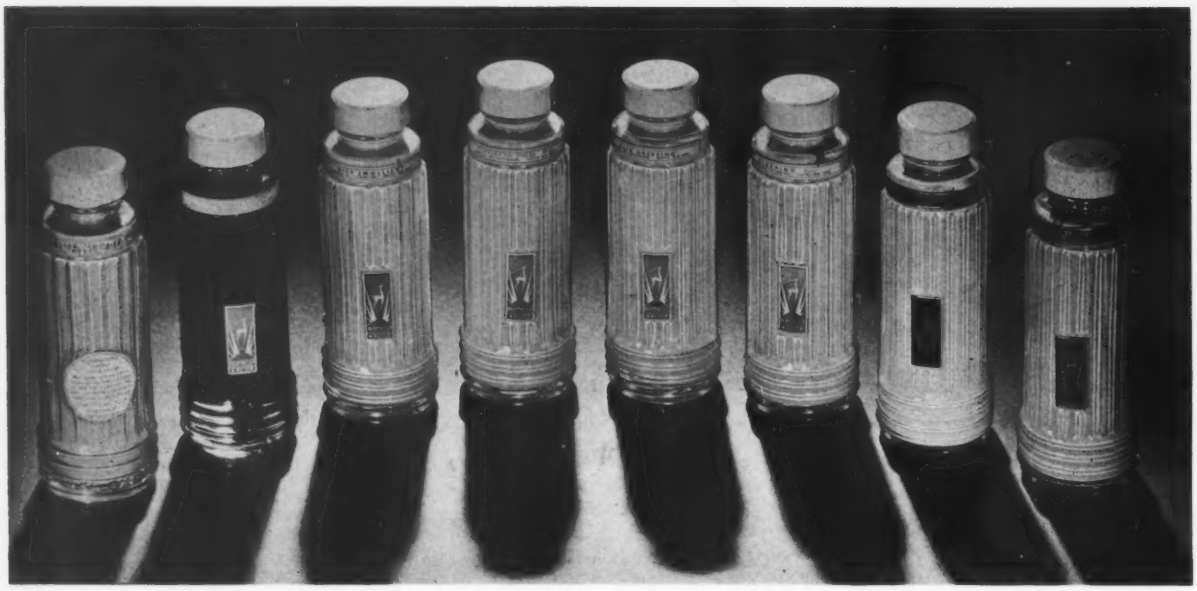
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8 A successor to the lithographed tin for Golden Bear cookies is this hexagonal carton, printed in yellow, brown, red and blue. A special opening device is incorporated in the top which makes for easy reclosure after cookies have been removed. Carton designed and made by Robert Gair Co., Inc., New York City.



9

9 A key-opening style lithographed tin can has been used for many years by Defender Photo Supply Co., Inc., for their prepared developer. The package had proved so satisfactory that the company felt dubious about obtaining a paper container to serve as a replacement. However, a sturdy tuck-in box, duplicating the color and design of the tin can, with a moisture-proof cellophane bag inserted to hold the chemical contents is now doing a good job of substituting for the can. Shelf appeal has not been lessened, as the group of old and new packages in the photograph illustrates. Caking, often incidental to paper containers, has been avoided, the company states, and users find contents keep well in the bag-in-box container. Carton, Rochester Folding Box Co., Rochester, N. Y. Cellophane bag, The Dobeckmun Co., Cleveland.



One bottle with multiple duties

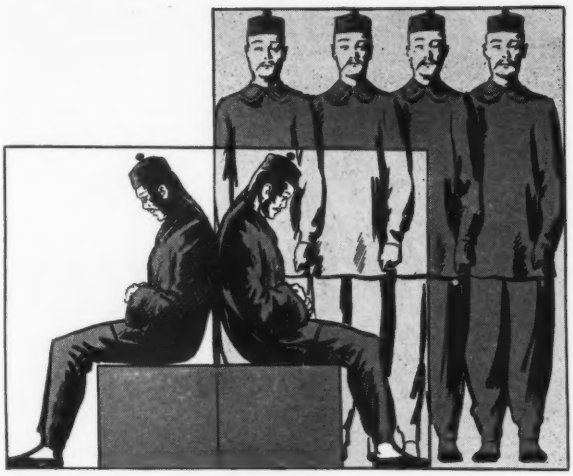
Ingenuity in the face of difficult circumstances fosters creative inventiveness and achievement in every field. It is particularly true in the cosmetic field, in which consumer appeal of the package itself plays such a large part. Dermetics' ingenious packaging idea was born of the last depression and it has lived to serve well under wartime restrictions. Then as now there was need for great economy, but for entirely different reasons. There was no shortage of materials, but packaged goods had to be kept within the buying range of the majority of people whose incomes had been curtailed during the depression years. At the same time there was high competition in the market. One product that could get the edge on another of the same type had to be very clever in package design. Consumer convenience, interest, tastes, all had to be carefully checked and considered. Price must be kept low, if a product were to be used by the majority of people. Therefore, materials for and the production of packaging the product had to be kept at economy levels.

Dermetics, Inc., up until about nine years ago had been packaging its cosmetics in bottles with smooth sides. The bottles were attractive, but they lacked consumer convenience. Women found they would often slip out of their hands because there was no grip surface. They became particularly slippery when handled with wet or greasy fingers. A broken or chipped bottle presented a damage hazard that had to be avoided. A special mold was indicated, a specially designed bottle that would take care of eye appeal and of consumer convenience. But special designs for containers for ten products was an extremely expensive project. Perhaps all designs might not even handle equally well on the production line. Dermetics got around that phase by deciding to use the same bottle for all ten products. That bottle would be turned into a kind of Dermetics' trademark. It would serve to keep family resemblance and brand continuity. A bottle was designed which had fluted sides—this provided the sure-grip surface which women felt was essential for convenience. The bottle was made small enough to be held easily in the hand. Sides were straight up and down and there was a solid base which would prevent the bottle tipping. A wide mouth provided easy means for pouring the hydronized oil cosmetics. Plastic closures were of the continuous-thread type with ridged surface around the edge so caps could be taken off and put on with slippery fingers.

A pink and blue quarter label fitted into the ridge at the top of the fluted sides. Product identification was placed on a pink and blue label in a recess in the front. A back panel held a label for information about the product and its use. The result was an attractive but simple container, distinctive in treatment and design. It caught on as soon as it was placed on the market. That was nine years ago. Today that same bottle is proving its continued worth. Dermetics did not have to think about simplification of containers, no new molds or change in production line when the war economy clamped down on packaging materials. The company had a simple container, it had no complicated molds to worry about. Its products were already being packaged on wise economic lines. Dermetics intends to continue this mold for the duration and also believes that even after the war, the identical bottle will be used. Prices of the products now range from $1.50 to $3.50, but Dermetics has found that the use of the same container has made no difference in consumer acceptance.

Shortage in the type of bottle has not as yet become a problem, the company reports. Up until the present time, they have not had great difficulty in obtaining the plastic closures. However, that may be a future concern and when a switch to other closures may be necessary, Dermetics will no doubt be ready with a wartime replacement.

Credit: Bottles, Glass Containers, Inc., Los Angeles. Plastic closures, Colt's Patent Fire Arms Mfg. Co., Harlford, Conn. Labels, Dennison Mfg. Co., Framingham, Mass.



WHERE TWO CAN SIT... FOUR CAN STAND...

. . . old Chinese proverb

EVEN with the best intentions, hospitality can go only so far. You are numerically limited by the number of square feet in your home, the number of calories in your ration book and/or pocketbook.

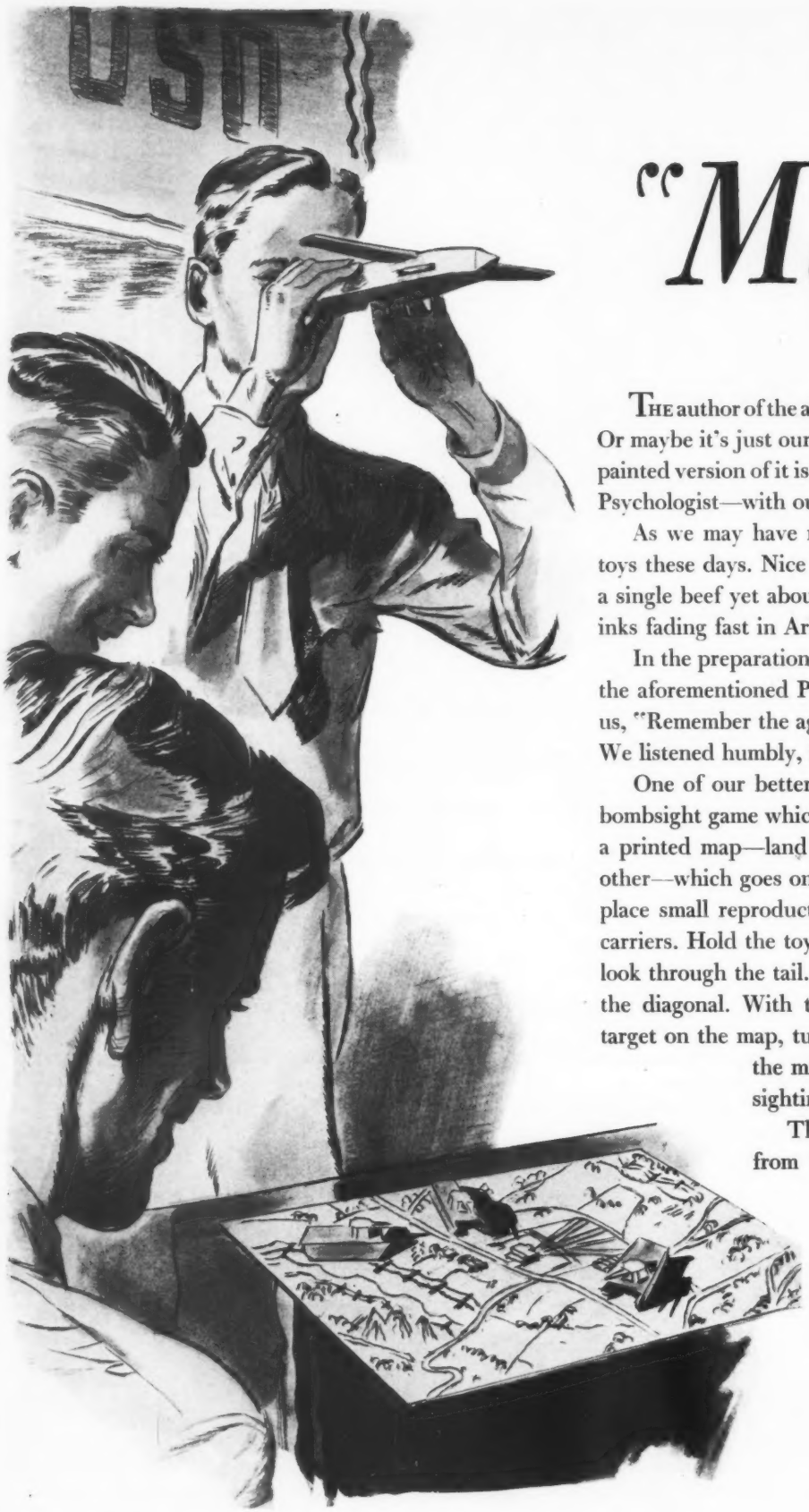
The same obtains when you're in business. We've tried to accommodate every order for our unique packaging developments that have helped so many industries keep selling, but we can only manufacture a given number of items with our resources of machinery, materials and manpower.

So if you have to wait for your *paper closures,* your *paper sifter-top cans.* your *paper lipsticks* or *compacts,* remember we're making them as fast as we can. And remember, after the war, all our facilities will be yours to command.



NEW YORK CITY • PHILADELPHIA • BOSTON
ST. LOUIS • ATLANTA • CHICAGO • CLEVELAND
CINCINNATI • LOS ANGELES • NEW ORLEANS
MEMPHIS • MINNEAPOLIS • KANSAS CITY
SAN FRANCISCO: 216 Pine St. – Telephone EXbrook 5323
CANADIAN DIVISION: Dominion Paper Box Company, Ltd.
469–483 King Street, West, Toronto 2, Canada

F. N. BURT COMPANY, INC.
500-540 SENECA STREET, BUFFALO, N. Y.



"Men are

THE author of the above line is lost in obscurity. Or maybe it's just our poor memory. But a hand painted version of it is going to an obtusely certain Psychologist—with our compliments.

As we may have mentioned, we make paper toys these days. Nice business, too. Haven't had a single beef yet about reproduction, or sun-fast inks fading fast in Arizona.

In the preparation of these toys, we consulted the aforementioned Psychologist, who cautioned us, "Remember the age group—eight to eleven." We listened humbly, for five hundred bucks.

One of our better productions this year is a bombsight game which retails for two bits. It has a printed map—land on one side, water on the other—which goes on the floor. On the map you place small reproductions of tanks, guns, ships, carriers. Hold the toy bomber over the map and look through the tail. Inside is a small mirror on the diagonal. With the mirror, you sight your target on the map, turn a little wheel, and drop the marbles on the target if your sighting is right.

The game got the glad hand from the eight to elevens . . .

only boys grown up—"

Then we got a letter from a USO director at an Air Force post. Quote:

"We have had occasion to utilize your cardboard toy bombsight . . . Our servicemen and officers here find them exceptionably enjoyable. The model we are now using has been accidentally destroyed and we are most anxious to procure some others. We have use for about six . . ."

But that was just the swallow that preceded the summer. A distributor of the Bombsight Game advertised in a magazine going to service men—and promptly placed with us an order. One of the largest orders we ever got, man and boy, thirty years in the lithograph business!

The indirect sighting feature seems to make the hit with the Air Force boys, whose minds are always on their work.

Also, we learn that our Preflight Cockpit game, which retails for a dollar, gets a big play at Air Force posts, as a sort of pre-primary prepper. The instrument board, stick, rudder and book of instructions start many an orderly room dogfight, help teach flying faster and earlier.

So from now on, if anybody, Ph.D. or premoron, for fee or free, ever says, "Remember the age group"—we are going to say "Fooey!" or words to that effect. A good idea has no age group!



And now that the general public is paying for our ideas and using them, instead of paying the firms that use our ideas, we are getting a post-graduate course in Merchandising—with two Ms!

The lithographer with ideas that the public buys is obviously a better source of display material than the lithographer with just ideas . . . or without ideas!

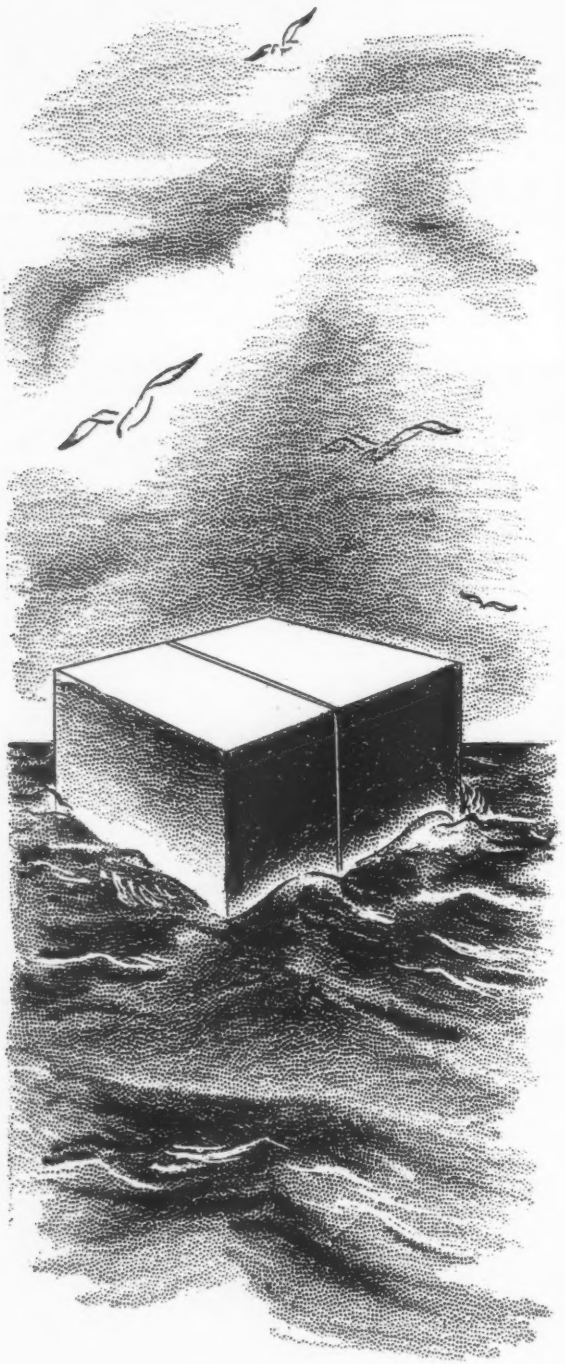
Remembering the age group—and forgetting it!—has taught us a lot about making displays that *your* age group is not so likely to overlook, or forget! And represents one more good reason, in addition to all the others, why Einson-Freeman should come first to mind when you want better displays . . . and why you should come first to Einson-Freeman!

Einson-Freeman Co., Inc.

ONWARD & UPWARD LITHOGRAPHERS

Starr & Borden Avenues, Long Island City, New York

THE WEATHERPROOF and WATER-RESISTANT ADHESIVES



Glu-weld

GLU-WELD adhesives answer the pressing packaging problems of manufacturers who must meet Army and Navy specifications. Their weatherproof and water-resistant qualities make them stand-out choices for sealing waterproof duplexed stocks and "V" type solid fiber cases, manufacturing ration and other wartime folding boxes, and waterproof bags.

THEY ARE ESPECIALLY DESIGNED TO AID MANUFACTURERS MAKING OVERSEAS SHIPMENTS

Samples will gladly be sent, providing the END USE of the adhesive is permissive under Allocations restrictions. The raw materials used in GLU-WELD are under Allocations, and only customers submitting satisfactory END USE descriptions can be served.

GLU-WELD is available

IN THE MIDWEST

The F. G. Findley Company

1230 NO. 10th STREET • MILWAUKEE 5, WIS.

IN THE EAST

Union Paste Company

1605 HYDE PARK AVENUE • HYDE PARK, MASS.

MODERN Display

Posters teach food saving

Another food company that is helping the government in its national nutrition program is Libby, McNeill & Libby. An entire display campaign has been organized, based upon the many factors that enter into the drive to educate consumers regarding the proper use of their ration stamps, the need for growing Victory gardens, why rationing is necessary, how to conserve needed foods, etc.

All the posters have the words, "Food Fights Too!" at the bottom. The only direct advertising which Libby's uses is a picture of a can bearing the name Libby's and the slogan, "100 Famous Foods." Such treatment serves as a means of keeping the name of Libby's before the public. In each instance the focal point of the poster is upon the illustration which is captioned to emphasize certain essential information about the nation's food.

In a recent survey by one of the leading consumer magazines, it was found that people are not too concerned about the substitute containers which many companies have had to adopt for their products or about the change in the color of a label. The majority of the public realizes that these changes are the result of war necessity. Their chief concern is with brand name. If consumers can locate their favorite brand, they seem to be confident that the product will satisfy them today as it has in the past.

Many firms like Libby's are helping the nation fight with food and use display programs to take information on the nutrition program to all parts of the country. These firms keep brand identity not only during the war but after the war is over. The change in emphasis from sell copy on display pieces for certain Libby's products to a general national theme on food does not lessen the value of the display program in keeping alive the name of Libby's.

The display campaign planned to aid the war program was begun some months ago. Every month a new poster is brought out and distributed to grocers throughout the country. Each one usually has a large human interest photograph and a quoted caption. Most of the posters are in black and white, although there are a number in color. They are either easel-backed for setting in store windows or use on ledges in store interiors or they are simple wall posters for pinning up. Grocers have found the units to be helpful in educating their customers and to relieve them of much explanation. For this reason, they have been enthusiastic about using the display material.

Three posters in the series which Libby, McNeill & Libby is distributing throughout the country. Victory gardens, the meaning of rationing and why food must be saved are the points emphasized by these cards. Illustrations for the cards are photographs and for this reason provide a more realistic effect than paintings or drawings.

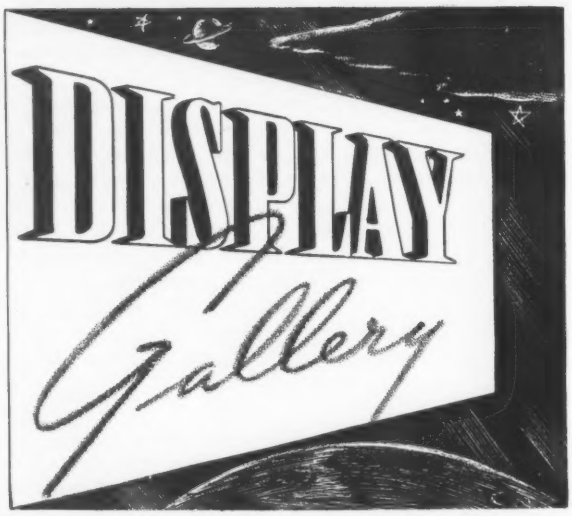




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1 Champion is distributing these colorful reminders that worn-out spark plugs are wasteful and that good spark plugs will help the consumer "get more miles per coupon" and conserve essential gasoline. This display card carries the same design that appears on window and wall posters which are also being distributed to dealers by Champion. Display by Forbes Lithograph Mfg. Co., Boston.

2 Schenley's Cresta Blanca uses the theme of adding glamour to meals by serving wine in this full-color display piece. The unit makes an effective focus for a window arrangement of bottles of Cresta Blanca wine. By emphasizing the serving of wine with meals, the poster implies that the shopper, when marketing for the meal, may purchase the wine for it at the same time. Display by Einson-Freeman Co., Long Island City.

3 Putting third dimension into a can top is the result of this display for Glidden Florenamel. The girl, the brush and the lower copy panels extend in front of the main display of the product. The girl is shown actually applying the paint to

4





demonstrate how easily it may be done. Use of a variety of lettering draws attention to each of the points the Glidden company wants stressed. Made by Stemar Displays Co., Chicago.

4 This window display, consisting of center piece and two side cards, features Curity Bauer & Black Surgical and First Aid products. There is a two-plane center piece with the background carrying the professional atmosphere and the front plane depicting a mother giving first aid treatment to her little girl for a minor injury. Made by Zipprodt, Inc., Chicago.

5 Victory gardens are victory gardens no matter whether they be acres or just the lowly window gardens of city dwellers. The new P. Ballantine & Sons display is built around the efforts of one of these city folk to play a part, however small, in the great job of feeding America and the world. Made by Consolidated Lithographing Corp., Brooklyn, N. Y.

6 Razoil Products of Poplar Bluff, Mo., makers of shaving cream and other shaving products, wanted some display material in a hurry for their new war package. The shaving cream was being put up in a jar with a special dispensing device. In the center of the jar closure a tube with a plunger had been inserted to afford convenient dispensing of the cream. The idea was to create a counter unit which would incorporate actual package display, so consumers would get to know about the new package at once. But display makers couldn't promise early deliveries. Razoil decided to make up the units by hand. A simple counter piece was devised and local boys and girls were employed to make up the displays. It is a card with side panels that fold back. The package fits into a cut-out at the base of the center panel and easel supports and locks hold the unit securely erect. The company reports that the units can be made at low cost despite the hand work and they are being produced in the wanted quantities. Other companies may find that similar home-made displays can pinch-hit in time of need.

7 Informative and educational is the new Sharp & Dohme window display. It calls attention to the prescription department in a graphic way. Colorful side pieces show preparations of exceptional interest and the attractive center panel includes reproductions of two paintings, for alternate exhibition, suggesting how prescriptions point the way to good health.

5



6



7





Elsie, her own arms laden with packages, is shown holding open the car door to admit three other shoppers in her "share your car" program.

Elsie helps the grocer

Red stamps, blue stamps, ration books, ceiling prices, shortages of foods, substitutes and replacement, not enough help, inexperienced clerks—all these and probably many additional wartime problems are all a part of the day's work to the American grocer. He welcomes any aids that will help him to give his customers an understanding of the difficulties of managing a grocery store in these days. He wants to give them the best service possible and he can if they will cooperate with him.

The Borden Co. with its nationally known and now famous trade character, Elsie, has created a series of posters designed to reach the men and women who do family marketing. The company has just released 75,000 copies of a four-color patriotic poster on share-the-ride theme and a series of other four-color posters on Hemo, emphasizing various points of the national nutrition program.

The share-the-ride poster portrays Elsie, the glamour cow, Elmer and Beulah pulled up in their automobile in front of a store and making room for others because they support the slogan, "Lug Thy Neighbor." There is no promotion of any Borden product in the poster. It is the first of a series to be issued every six weeks, dramatizing patriotic themes. The Borden Co. states it is part of Elsie's program of helping in the emergency.

The series featuring Hemo is being distributed among grocery stores and soda fountains. They illustrate humorously the shortage of clerks and how it is possible to substitute one food for another and still have a good, healthful diet. The posters carry catchy verses which customers will find amusing to read. The only advertising other than the quickly recognized figure of Elsie is the word Hemo at the foot of each poster and the price per pound of the product.

Credit: Lithographed by Snyder & Black, Inc., New York City.



PARDON, PLEASE, OUR SHORTAGE OF CLERKS,
THEY'VE LEFT TO GIVE HERR HITLER THE WORKS;
BUT WE CAN FILL YOUR NOURISHMENT NEED,
VITAMINS AND MINERALS COMBINED, INDEED,
WITH BORDEN'S "HEMO", THE CHOCOLATE DRINK,
MADE TO KEEP YOU RIGHT IN THE PINK.

"HEMO" 59¢ LB.



WE MAY BE SHORT OF THIS AN' THAT
(HELPING TO SKIN THE AXIS' CAT)
BUT IF YOU'RE LOOKIN' FOR NUTRITION,
JUST GIVE HEED TO THIS DEFINITION—
"HEMO", THE INEXPENSIVE WAY,
TO KEEP YOU NOURISHED, HEALTHY AND GAY.

"HEMO" 59¢ LB.

Elsie is again the central figure in these four-color posters on Hemo. Nutrition and the war emergency furnish the theme for a series of good-humored display units on the chocolate drink.



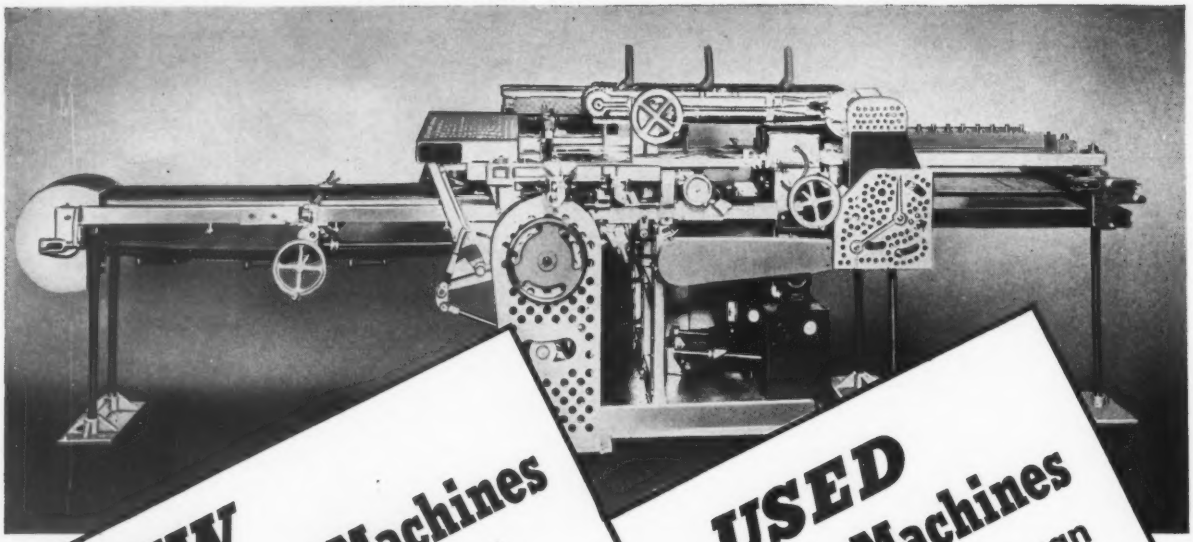
After the War . . .

the Kollsman Instrument Division of Square D Company, Makers of Aircraft Instruments . . .

will be glad to fix up your fliver, convertible, two-seater plane with the latest in air speed indicators. You may not know a Pitot Static Tube from a speedometer cable, but we'll warrant, that after the war, you will know more about the former. Right now Kollsman Instruments are helping to "keep them flying". Naturally, after the war you will get first choice in all the things they've learned in war production.

Another thing that's coming out of this war is better shipping—safer shipping and whether it is Pitot Static or speedometer cables, you'll find the Mason MailMaster the prefabricated answer to small parts delivery. Its easy labelling, its structural strength, its easy closure and its safety of delivery will mean less over-head in the shipping department.

THE MASON BOX CO.
ATTLEBORO FALLS, MASS.
175 5TH AVE.
NEW YORK



NEW
Wrapping Machines
for war or essential civilian supplies

USED
Wrapping Machines
for manufacturers who can not obtain high priorities

We can serve you either way

Because we are at present re-tooling for additional war work, our production has been so arranged that we can build a certain number of new wrapping machines *without* interfering with our armament work. So if you need an additional machine for essential supplies, don't fail to consult us . . . We'll be glad to give you helpful information about obtaining the necessary priorities.

If you can't obtain a sufficiently high priority, or haven't time to wait for a new machine, our Wrapping Machine Procurement Service will endeavor to put you in touch with a manufacturer who can *sell or lease* you a used machine of the right type. We have made a careful survey of the machines available and have on file the names of owners, model numbers and the kind of wrapping the machines can produce. In making use of this service, you are not restricted to wrapping machines now used in your field, for practically all of our machines are readily adaptable to different forms of wrapping.

Put your problem up to our nearest office

PACKAGE MACHINERY COMPANY, Springfield, Massachusetts
NEW YORK CHICAGO CLEVELAND LOS ANGELES TORONTO

PACKAGE MACHINERY COMPANY

Over a Quarter Billion Packages per day are wrapped on our Machines

TECHNICAL SECTION

- MACHINERY
- PRODUCTION
- TESTING

Technical Editor
CHARLES A. SOUTHWICK, JR.





Left. New testing apparatus developed by General Foods, showing the major elements disassembled. From left to right, the parts include metal screw cap, rubber gasket, cover disk, filter paper, film sample to be tested. Tube at right leads to vacuum pump. Right. Apparatus assembled. Leakage or gas transmission through sample is shown on manometer, which includes closed end tube, capillary center tube and side tube for evacuation.

Permeability of flexible materials

*by L. W. Elder**

Due to the current shortage of tinplate for packaging certain foods and other perishable products, there is at present widespread interest in the properties of flexible packaging films and coated papers which could be used in forming substitute containers. The need for such flexible light-weight, airtight containers is especially obvious for packaging dehydrated foods for overseas shipment, for which minimum weight and bulk are of paramount importance.

In response to this need we are witnessing the development of a wide variety of synthetic film-forming compositions which can be used to supplement or modify the older well-known protective wrappings such as cellophane, glassine and parchment.

In order to make an intelligent choice among the wide variety of materials for a particular packaging problem it becomes necessary to have available accurate test methods for rating the relative permeabilities of these films to air or, more specifically, to oxygen. Quantitative numerical specifications regarding the rate of oxygen transmission through flat films, creased films and through package seams are as important and

* Director of Physical Chemistry Section, General Foods Corp., Central Laboratories, Hoboken, N. J.



Sample to be tested being placed in position. When ready to be tested, sample is evacuated through flexible connection by means of high vacuum pump.

useful in designing packages for certain products as are the better known specifications for moisturevapor permeability.

Test methods. As in the case of tests for moisturevapor permeability, the methods for evaluating air permeability are in general of two kinds, one based on the direct measurement of the quantity of air or gas transmitted through a flat disk or test material, the other based on an analysis of the change in gaseous content of finished packages containing the products for which packaging specifications are desired. The quantity of fixed gases sufficient to cause spoilage of certain products is, unlike watervapor, too small to be measured by change in weight on an analytical balance; consequently most methods make use of change in gas pressure, or chemical analysis to show changes in composition of the gaseous atmosphere within the package.

Apparatus and methods used in General Foods Laboratories differ from those previously described chiefly in the means provided for obtaining extra high sensitivity for detecting minute traces of air passing a film barrier. To illustrate the need for high sensitivity the following example can be cited.

Ground, roasted coffee is a commodity which spoils rapidly when exposed to air. In an ordinary paper bag it becomes stale and unpalatable after a period of 10 days to three weeks, depending on temperature and other storage conditions. This is the circumstance which has led to the rapid increase in popularity of vacuum packed coffee. Extensive tests have shown that at the end of a normal (pre-war) shelf life, let us say 30 weeks, flavor spoilage due to oxidation can be detected in coffee which was packed under an initial vacuum of 27 in. or less. This illustrates the effect of a poor initial vacuum even though the container material, in this case tinplate, is impermeable to air. On the other hand, when coffee is vacuum packed in a collapsible film such as rubber hydrochloride under a perfect vacuum, we have found that by the time the normal permeability of rubber hydrochloride (see Table) has allowed enough air to leak in to equalize about four inches of the initial vacuum, staling and oxidative flavor spoilage begin to appear. It is to be noted that in this case the package starts with complete exclusion of air, the latter leaking in gradually over a period of time. This is not quite the same thing as starting with an incomplete vacuum which leaves a definite amount of air in contact with the coffee over the same period of time. This accounts for the fact that the rubber hydrochloride bag can contain more air at the time its contents begin to undergo staling than does a vacuum tin at the same point in flavor deterioration.

Translating these figures into more familiar terms such as are used in expressing moisturevapor transmission—a flexible film container, which would be adequate to prevent staling of coffee at the end of 30 weeks of shelf life, should have an air permeability not greater than 0.3 cc. per 100 sq. in. per 24 hours. In order to be able to compare with any degree of accuracy film materials having this degree of permeability, the test method should be capable of detecting as little as 0.05 cc. gas or air per 100 sq. in. per 24 hours. A moisturevapor permeability of 0.05 gram of water per 100 sq. in. per 24 hours (not to be confused with 0.05 cc. of watervapor) represents a very effective moisturevapor barrier. However, it can be seen that the specifications and test method for air transmission, at least as far as coffee packaging is concerned, must be approximately 1,000 times as rigorous since 1 cc. of air weighs approximately $^1/_{1,000}$ of a gram.

In any attempt to evaluate packaging materials suitable for excluding air from commodities which are highly sensitive to oxidation, such as coffee or certain of the dehydrated vegetables, it becomes a matter of interest to speculate what is responsible for control of such permeability. It is common

PERMEABILITIES OF SOME PACKAGING FILMS

	Air,* cc./100 Sq. In. per 24 Hrs.	Carbon Dioxide,* cc./100 Sq. In. per 24 Hrs.	Moisture Vapor, gm./100 Sq. In. per 24 Hrs.
Polyvinyl alcohol, types A and B, 0.002 in. to 0.003 in.	0	0	10 (minimum)
Rubber hydrochloride PO-140	6	25	0.3
Polyvinylidene chloride †100 gage	0	0	0.17
Glassine, 0.001-in. single ply	5	..	...
Glassine, two-ply laminated	0	..	...
Polyvinyl alcohol coated on paper			
1 coat	Rapid leakage	..	...
2 coats	Approx. 1,000	..	...
3 coats	0	..	...

* Air is approximately $^1/_5$ oxygen by volume. Precision, approximately ± 0.5 cc. per 100 sq. in. per 24 hrs.; cc. calculated to standard temperature and pressure. Data from new apparatus and technique capable of better precision are not yet available.

† Results tabulated for materials other than polyvinyl alcohol and rubber hydrochloride are single observations, not necessarily representative.

knowledge that films or coatings deposited from solutions in solvents can be expected to show small pin holes resulting from evaporation of the last traces of solvent. Such defects are commonly encountered also in very thin metal films. It is common practice to correct for this type of defect by laminating two or more plies or, in the case of coated stock, by application of two or more successive coats with complete removal of solvent from each coat as it is applied. Presumably pin holes, cracks and other defects are not too numerous in a single ply. The probability that the pin holes in any two adjacent plies would exactly coincide is highly remote. Examples of this effect are shown in the accompanying table, where it can be seen that the permeability of a single ply of glassine or a single coat of PVA on paper is very much reduced by lamination in the one case and by multiple coating in the other.

A further limitation on permeability of wrapping film is set by the closeness with which the ultimate building blocks or molecules of the material approach each other. This is known to the X-ray technologist as the lattice spacing or fibre factor. In more homely terms, an individual gas molecule might see one film barrier as a fine screen or mosquito netting, whereas another would appear to resemble chicken wire. The ability of gas to pass through such very fine openings differs somewhat from leakage through pin holes, although the line of distinction cannot be sharply drawn, since mechanical defects can be extremely small, approaching molecular dimensions. The ability of the gas to pass films having relatively open molecular structure, the chicken wire type, depends on how heavy the individual gas molecule is. Physicists have found that light molecules get through faster than heavy molecules. This explains why it is that many balloon fabrics which are comparatively tight when extended with air or heavier gases still leak hydrogen fairly rapidly. Helium, being intermediate in weight between hydrogen and air, is retained more completely by the balloon fabric than is hydrogen.

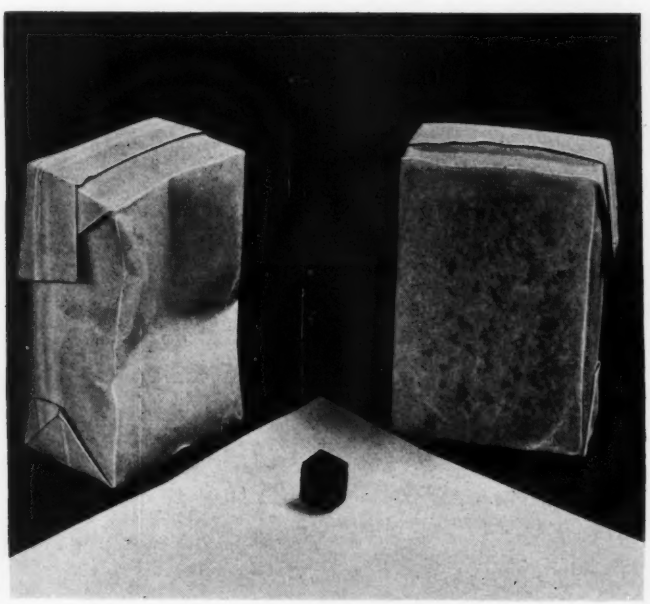
There are certain phenomena in gas transmission which require still further explanation. For example, an understanding of leakage through pin holes or by diffusion through molecular lattices does not explain why carbon dioxide, a comparatively heavy gas, will pass through rubber hydrochloride approximately four times as fast as air. Neither does our theory explain why polyvinyl alcohol film will substantially exclude both oxygen and carbon dioxide, but will allow watervapor to pass quite freely. The most reasonable explanation which suggests itself in these cases is at present only a guess. It is the writer's opinion that a film which is free from pin holes and has the molecular structure adequate to serve as a physical barrier for all gases can still pass certain specific gases by a mechanism of solution and evaporation. According to this picture, the gas molecule actually dissolves in the surface of the film on one side, diffuses through and evaporates from the other side. The gas molecule is no longer a gas molecule while it is passing the film. It is as if a butterfly could revert to the larva stage, work its way through a vertical earth barrier and change back from larva to butterfly on the far side.

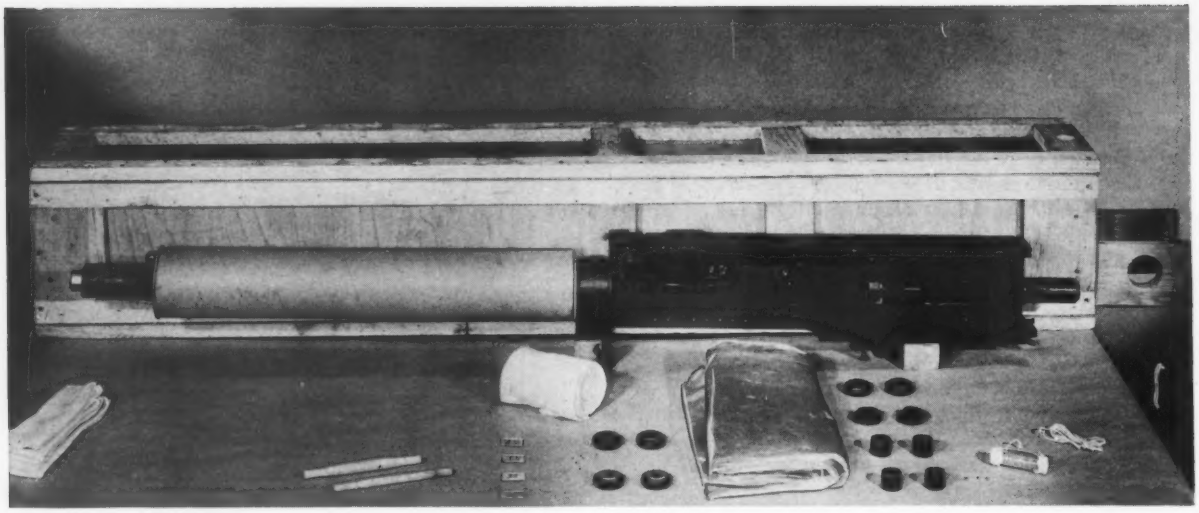
Just as a chain is no stronger than its weakest link, a package made from gas-impermeable film is limited in value by the permeability of its seams and closure. The best performance in this respect is given by thermoplastic films and coatings which can be fused or welded into a continuous film at the seams and closure by application of heat and pressure. Even such materials are subject to imperfections due to softening of the film adjacent to the seal and its consequent sensitivity to mechanical abuse in the heat-sealing operation.

Methods for testing the impermeability of lap seams are being worked out, using the high sensitivity testing device referred to above. However, the most useful information is obtained by practical storage tests, followed by internal pressure measurements or, where possible (as in the case of ground coffee), by chemical analysis of the gases contained in the package for air contamination.

Left. One of the typical packages used as standard test package. An analysis is made of the change in gaseous content of finished package, containing the product for which packaging specifications are desired—in this case coffee. Right. The flabby package indicates that air has leaked through the film material. Taut package has been freshly vacuumized. Film is stretched so tight over coffee grains, the outlines show through film. Small cube represents 1 cc. of gas or air.







Frigidaire's application of Method II packaging to the 50 caliber machine gun uses two Saran films. Cardboard tube containing dehydrant has been clamped in place over barrel jacket. Other components of package are in foreground.

Saran film—its properties and wartime uses

*by W. R. Dixon and H. L. Schaefer**

Global warfare is accompanied by a problem of supply without parallel in history. It is not sufficient to deliver vital aircraft or ordnance parts to Africa, Alaska, Murmansk or Midway. Those parts must be delivered with factory freshness—free from damage by moisture and dust. The effects of corrosion destroy the value of the parts as precision replacements. Insuring that equipment is transported and arrives in usable condition is an important task of the services of supply of our armed forces. Delivery of the needed part to the right place at the right time—and in usable condition—is one of the unsung achievements of the military. Undramatic as it may be, it is still necessary to the completion of the headlined bombing mission or the knifing tank thrust against enemy strongholds.

The magnitude of this problem is complicated by the multiplicity of replacement parts for aircraft and ordnance matériel. Aircraft engine parts, propellers, carburetors, fuel pumps, machine guns, cannons, tanks, jeeps and hundreds of other items must be instantly available for use when needed. Frequently a year or more may elapse between the manufacture of the part and the installation, and half the distance of the globe may intervene.

During shipment, the part may have been exposed to every element while awaiting space on a cargo ship. It may have ridden for weeks on a small bottom, tightly enclosed in a humid compartment in which the moisture is alternately condensed and evaporated by the constantly changing temperature. As in the case of many a military outpost, it may have been tossed overboard at high tide to be picked off the beach hours later when the tide ran out. It may have rested on a supply depot shelf for an indefinite period before finally reaching its ultimate destination on a flying fortress or on a gun, covering a forward advance.

The search for materials to protect vital shipments from the elements has consumed many months of intensive research. As these products began to become available, it soon became evident that specialized knowledge of methods of fabrication and methods of testing were also needed in order to insure optimum results. Today these parts are being delivered on time and ready for instant use by several basic methods of packaging.

The methods thus far developed and in use are three:

Method I—Coated with a corrosion preventive and wrapped in greaseproof paper.

Method IA—Coated with a corrosion preventive and enclosed in a watertight conforming wrap.

Method II—Sealed in a moisture barrier in which is also enclosed a dehydrating agent in sufficient quantity to maintain a low relative humidity in the enclosed space for a specified period of time.

The newest of these is dehydration packaging, the so-called Method II pack. Certain matériel and parts, which may suffer damage because of application of or removal of corrosion-preventive compounds ordinarily applied in other methods, may be packaged in accordance with Method II. Because of the newness of the process and the requirement of trained labor to apply it, most agencies require that this method only be used when specifically stipulated by the procuring branch. According to government specifications, the moisture barrier shall have a maximum moisture-vapor transmission rate of 0.25 gram per 100 sq. in. per 24 hours

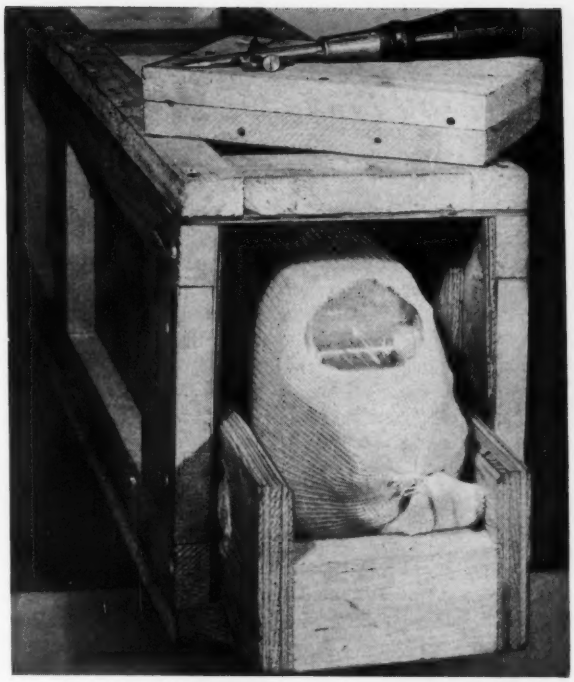
* W. R. Dixon and H. L. Schaefer are members of The Dow Chemical Company. Mr. Dixon is with the Plastics Engineering Division and Mr. Schaefer with the Saran Development Laboratory.

with vapor pressure differential of 42 mm. of mercury at 100 deg. F. In some cases it must permit visual inspection of an included humidity indicator without the destruction of the moisture-tight integrity of the sealed barrier. In all cases it shall permit opening for purposes of renewal of the dehydrating agent, which is enclosed, without damage to the barrier so that it may be resealed to provide a moisture-tight joint after represervation.

Steadily on the increase, but still under strict supervision by the procuring agencies, is this method of insuring delivery of parts to far-flung battlefronts. Fortunately, new and more suitable materials have become available as this need grew vital. Outstanding among these is Saran film (polyvinylidene chloride) and experience with it to date has measured up to every requirement of the toughest packaging job yet undertaken.

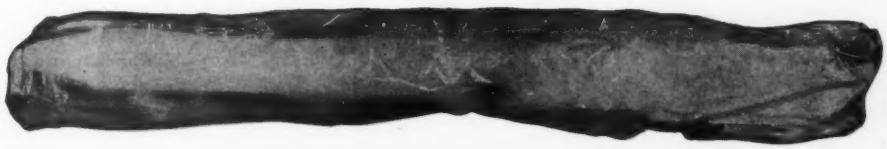
An outstanding example of Method II packaging is depicted in the accompanying illustrations. Developed by the Frigidaire Division of General Motors Corporation, this package for a 50-caliber machine gun is an indication of the value of painstaking research in packaging methods. The package is designed to afford protection from corrosion by moisture for a period of 9 to 12 months without replacement of the dehydrating agent. This protection is achieved by the use of two separately sealed tubes o Saran.

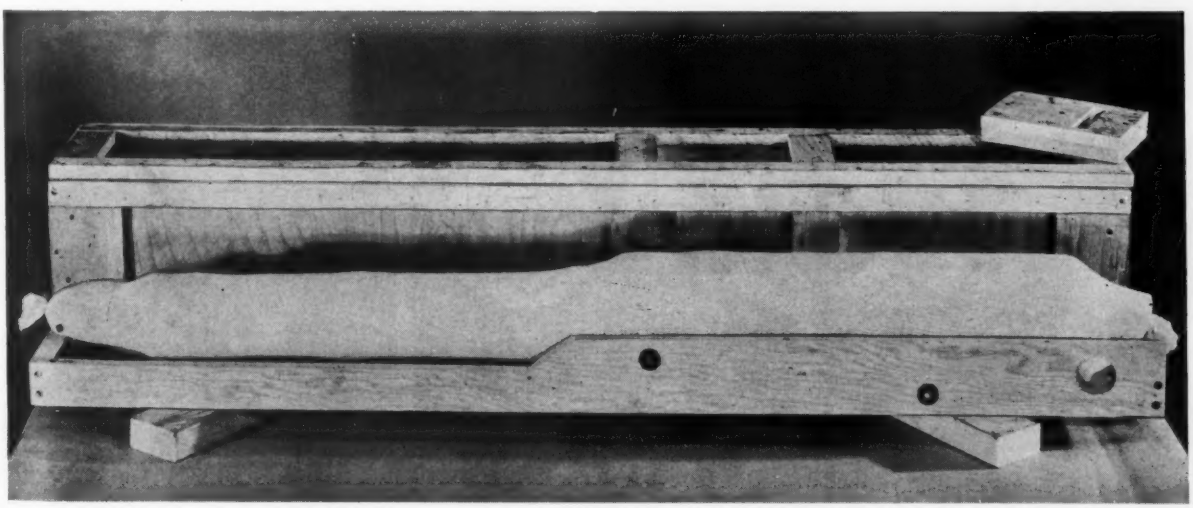
The previous method involved the saturation of the gun with hot cosmolene, a heavy grease, at room temperature. A minimum of three to six hours' depreservation time in the field is eliminated by the new design, which more than compensates for the added cost. Further savings, more valuable than money, are effected by the prevention of failures due to inadequate removal of the grease from the firing chambers during cleaning. The Frigidaire design also incorporates an ingenious, two-point support for the gun to avert shock during shipment. (*Continued on page 107*)



The cradle slides snugly into the container and it fits securely without being either nailed or screwed in place. The inspection of the humidity indicator is made through the Saran film. Thus it is possible to make a visual inspection of the included humidity indicator without the destruction of the moisture-tight integrity of the sealed barrier. This package is designed to afford protection from corrosion by moisture for a period 9 to 12 months without replacement of the dehydrating agent.

Right. First Saran film slipped over gun and stockinet and sealed. Openings around anchor pins are protected against moisture entry with washers. Below. Gun enclosed and mounted in cradle.





Heat Sealing—*practice and equipment for bags*

*by James E. Corcoran**

There are two methods by which an article or product can be wrapped. The first is to enclose the article by wrapping a sheet of material around it and then making the seams and seals. The second is to use a pre-formed wrapper, that is, a bag, insert the article and then seal the bag.

It is the second method with which this article deals, as wartime packaging has brought into widespread use the heat-sealed bag. These bags are used for military and civilian packages and many of them are required to meet packaging specifications met heretofore only by metal containers.

Before the war, there were hundreds of millions of heat-sealed bags used yearly, but many of these were on low-priced packages such as salted nuts, candy, popcorn, potato chips, etc. Many of these were made and sold locally, were light in weight, had a short shelf life and had to meet practically none of the conditions the new wartime packages encounter. Many of the foreign posts to which our military packages are sent do not have adequate docking or warehousing facilities. Hence the packages sent there must be made to stand water immersion and exposure to the elements.

Inattention to any of the steps necessary to turn out a complete heat-sealed package will generally result in a failure package. A heat-seal bag closure is only one element in making a satisfactory package and other pertinent elements to be considered are:

1. What are heat-sealed bags?
2. Types of heat-sealed bags.
3. Bag closing machines:
   (a) Types of machines
   (b) Factors necessary to heat seals
   (c) Methods of adjusting time, heat and pressure
   (d) Sealing jaws and rollers, with and without crimping teeth
4. Bag handling and storage.
5. Bag loading.
6. Bag and carton package (Bag-in-box).
7. Radio bag-sealing machine (see article elsewhere in this issue on "Sealing by Electronics.")

* President, Wrap-Ade Machine Co., Newark, N. J., and consultant on heat-sealing and bag handling methods.

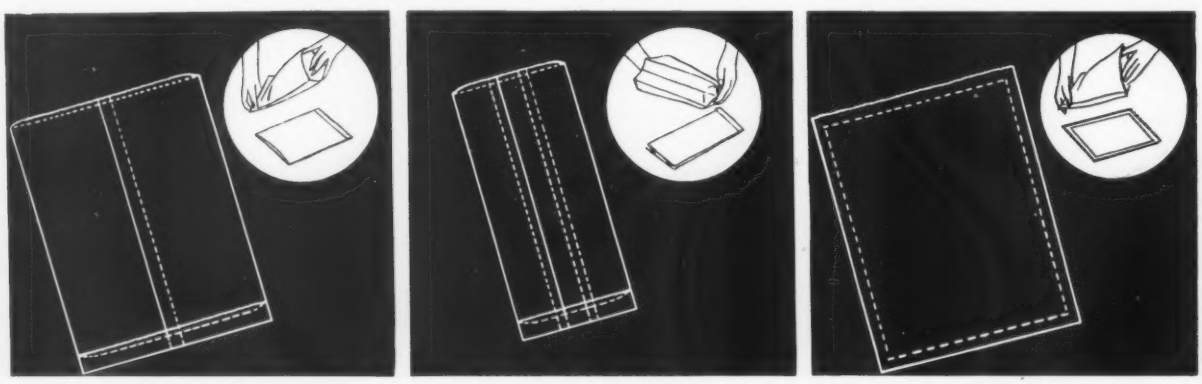
As the name implies, a heat-sealed bag is one made of films or sheets of materials, one or both sides of which is coated with a heat-sealing agent. The bag may be one on which the seams or seals are made by heat sealing or these joints may have been made with adhesive. Some bags have a combination of heat seals and adhesives. A simpler definition is a bag which can be closed by means of a heat seal.

Heat-sealed bags are generally used for the protection the seal offers and the quality of the seal made depends to some extent on the construction of the bag. Three types of bags illustrated herewith are widely used. They are: (1) The fin or pouch bag, (2) the flat bag, (3) the gusset bag.

The fin or pouch bag is made by sealing two sheets of material together around their four edges or by folding the sheet back upon itself and heat sealing the other three edges. The folded edge is the weak part of this bag and it is often strengthened by applying a heat seal adjacent to the folded edge so that the finished bag has four heat-sealed sides. In this type of bag the material to be heat sealed is of identical thickness all around the bag with the result that no "pipes" or leaks can occur in the seals unless the material is wrinkled. This type of bag is widely used on wartime packages of food, drugs and metal parts. It is the best type of heat-sealed bag

The flat bag is made as a flat tube with a seam down the back which may be either heat sealed or glued. The glued seam bag is most widely used for the reason that most existing bag-making equipment is designed to apply adhesive on the bag seam. The adhesive is oftentimes applied in two or even three separate strips and such seams have been found generally satisfactory. The bottoms of the flat bags are made either by means of a heat seal or a heat seal and an adhesive. The heat-sealed bottom may be either a straight seal or a seal made after the material has been folded. The combination heat-sealed and glued bottom is made by heat sealing the material, folding it back on itself and securing it by means of an adhesive. This type of bag bottom should be used if the bag alone is to carry the weight of its contents. Flat bags with glued back seams and bottoms which are heat sealed and glued have been used for many years on frozen food packages. The nature of the quick

The three types of bags shown (from left to right): the flat bag, the gusset bag and the fin or pouch bag.



frozen foods is such that the package must be tight and the continued use of this type of bag on frozen foods is an indication of its value. The bottom seal on a flat bag is more difficult to make than that on a pouch type bag because of the additional thickness caused by the overlap of the back seam. This naturally applies to seal made at the bag top.

The gusset bag, as will be noted from the illustration, has six score lines and unless care is taken in the fabrication of the bag, weaknesses are apt to develop along these lines. The back seam of the gusset type bag is made the same as that on the flat bag, as is the bottom. This bag has the same weakness as the flat bag in being sealed at the top or bottom because of the varied thicknesses of the bag due to the back seam and gussets. Flat or gusset bags, made of material with the heat-sealing film heavy enough to flow in and fill up the gaps caused by the gussets and back seam, are widely used and are found to be quite satisfactory. Bag-sealing machines with one rigid and one resilient sealing member are recommended for sealing bags whose thickness is not uniform.

Of the machines which are used to seal these bags, there are two types: the reciprocal or jaw type sealer and the rotary sealer. The simplest form is the jaw type which consists of two heated metal plates which are brought together either by manual or motor operated mechanism. The rotary sealer consists of two heated rollers through which the bag top passes, these rollers being motor driven.

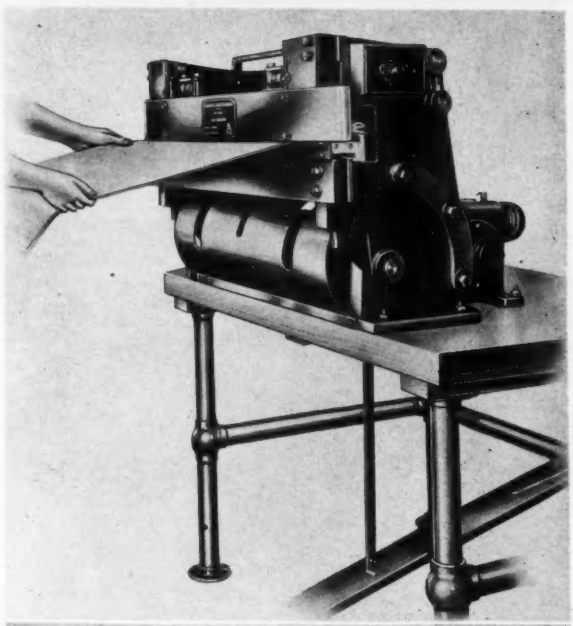
The question of whether to use a jaw type or rotary sealer is dependent largely upon the type of material to be heat sealed. A study of the factors necessary to make a good heat seal will help in the selection of the proper type of machine. In a recent article in Modern Packaging, F. S. Leinbach indicated that the three important factors in making a heat seal were: (1) The temperature used to furnish the heat, (2) the pressure with which the layers are held in contact, (3) time during which hot contact is maintained.

Taking these factors in order, the first to be considered is heat. Just how much heat is required to heat seal a given material and how closely the heat must be controlled are information which should be secured from the bag supplier, who, in turn, gets his data from the fabrictor who applies the heat-sealing agent to the film or sheet. Some materials heat seal at 140 deg. F., others as high as 500 deg. F. The job of heat sealing a given bag is made easy or difficult, depending on how much temperature variation can be permitted and still get a good seal. The higher the sealing temperature and the greater the rate of heat consumption, the more difficult it is to hold a given temperature.

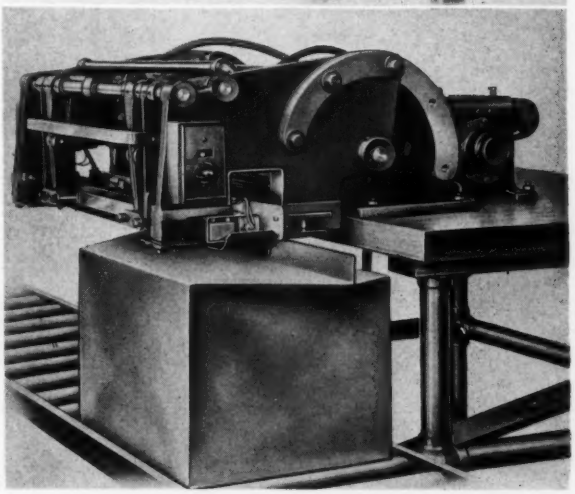
Laminated and multiwall bags play a large part in packaging today, and they suffer most from the application of improper sealing temperatures. No one material offers all the protection necessary for wartime packages. Hence it has been necessary to combine various kinds of materials to make multiwall bags. The material in these bags may be laminated or not and some bags are made of as many as 12 layers of material. This presents a problem to the heat sealer, because it is difficult to get a good heat seal on



1



2

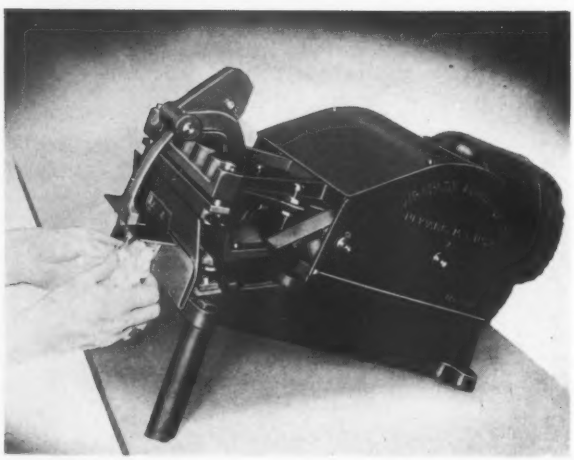


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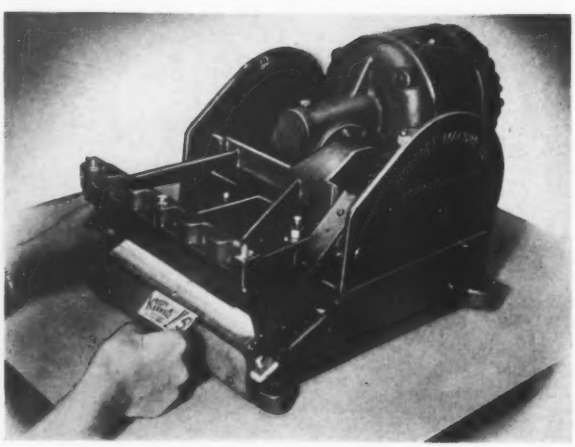
1. An example of a heat-sealed package, made on a rotary sealer where the heat-sealing material has been purposely embrittled to make the product readily accessible to the consumer. 2. and 3. A heat-sealing machine of the jaw type with sealing jaws 30 in. long, which is used to make heat-sealed bags that are too large to be made on automatic bag-making machine. Top view of the machine shows the sealing head positioned so that the material to be sealed is handled in a horizontal plane. Below is the same machine with sealing head positioned so that a bag top can be sealed without lifting the package.



4



5



6

the innermost surfaces of the bag. This seal must be accomplished without doing injury to any of the other layers of bag material. Laminated bags offer a particularly difficult sealing problem, because most of the laminating agents have lower melting points than the sealing temperature of the heat-sealing film. For this reason it is desirable to seal the bag at the lowest possible temperature. This may be done by increasing the pressure factor somewhat and adjusting the timer period so that the heat can pass through the several layers and bring about a heat seal on the innermost surfaces. An example of this is found in a bag which when made singly will heat seal at 200 deg. F. with the pressure applied for half a second. The same material made into a bag of three or four thicknesses should be heat sealed at the same temperature. However, this is not possible where production is a factor. It might be found that the time period required to seal the laminated bag at 200 deg. F. would be 10–20 seconds. Obviously this rate of speed would make the heat-sealing operation a bottleneck in production. It is therefore necessary to compromise and raise the temperature and decrease the time factor. The quality of this seal will depend upon the judgment of the person making the adjustment in the time-temperature-pressure relationship.

The user of a heat-sealing machine is naturally desirous of learning how he can determine what a seal made with the proper temperature looks like. On opaque lacquer-coated materials, the sealed area must be pulled apart to be examined. If the seal is blistered or brittle or if the lacquer has been squeezed out of the seal to a smoky appearing area adjacent to the heat seal, the temperature was too high. On transparent materials, the above conditions can be observed without destroying the seal.

The presence or absence of a transparent heat-sealing lacquer on a given material is difficult to determine except in a laboratory. One supplier has recently tinted his heat-sealing agents so that their presence or absence can be determined. When a heat seal made on such material is pulled apart, the presence or absence of color in the heat-seal area enables the user to determine whether or not a bond has been made between the two surfaces. It is to be hoped that this or other methods of lacquer identification may be further developed because it is of considerable benefit to the user of heat-sealing materials. It should be pointed out here that in making a heat seal, the temperature of the heat-sealing agent should be raised to the point where the agent is plastic and not liquid. If the agent is brought to the liquid stage it may be squeezed out by the pressure factor or driven into the film on which it is based.

Lacquer-coated materials have a useful life depending on their ability to hold the moisture which is part of their make-up. If they lose this moisture they become brittle and fragile. A heat seal made at too high a temperature drives the moisture from the material in the heat seal area and accordingly shortens the life of the bag which is so heat sealed.

The pressure factor is fairly easily controlled. The seal should be made with the least possible pressure, particularly where laminated materials are used.

The time factor limits the production pace of the bag-sealing operation. When additional production is desired there is a tendency to cut down the sealing time. It is im-

4. Semi-automatic rotary sealer. The operator must guide the bag up to the sealing rollers. 5. Jaw-type sealer with a folding device. 6. Jaw-type sealer which may be used on either combination or double packages.

portant to note that the heat and pressure should be applied for as long a period of time as is compatible with production requirements. A test can be applied to see if the temperature is too high by momentarily increasing the time factor. If a damaged seal results, this is evidence of excessive heat. Means of adjusting the time factor are discussed below.

The two common types of heat-sealing agents are (a) the lacquer type and (b) the hot melt type. On the first of these, time, heat and pressure factors are very important, because of the minute quantities of heat-sealing agent on the bag material. This quantity is so small that the slightest wrinkle in the bag seal will cause a "pipe" or leak through the seal. Rotary sealers have a tendency to create wrinkles. Because of the short time element, they generally operate at higher temperatures than jaw type sealers and for these two reasons are not generally recommended for use on bags made of lacquer-coated films. The hot melt type of heat-sealing agent is generally applied in a fairly thick coating and this feature makes their heat sealing less critical. Rotary type sealers with pre-heating elements and cooling pressure belts do an excellent sealing job on this type of heat-sealing material. The hot melt coating is generally thick enough to fill up the variations in thickness found in flat or gusset bags.

The heat seal on hot melt coated bags and laminated bags should be kept at least $^1/_8$ in. from the bag top, to prevent bleeding of the heat-sealing or laminating agents. The user of heat-sealed bags will find that his bag supplier is familiar with various types of heat-sealing machines and is generally in a position to recommend the type of sealer which should be used on the bag he supplies.

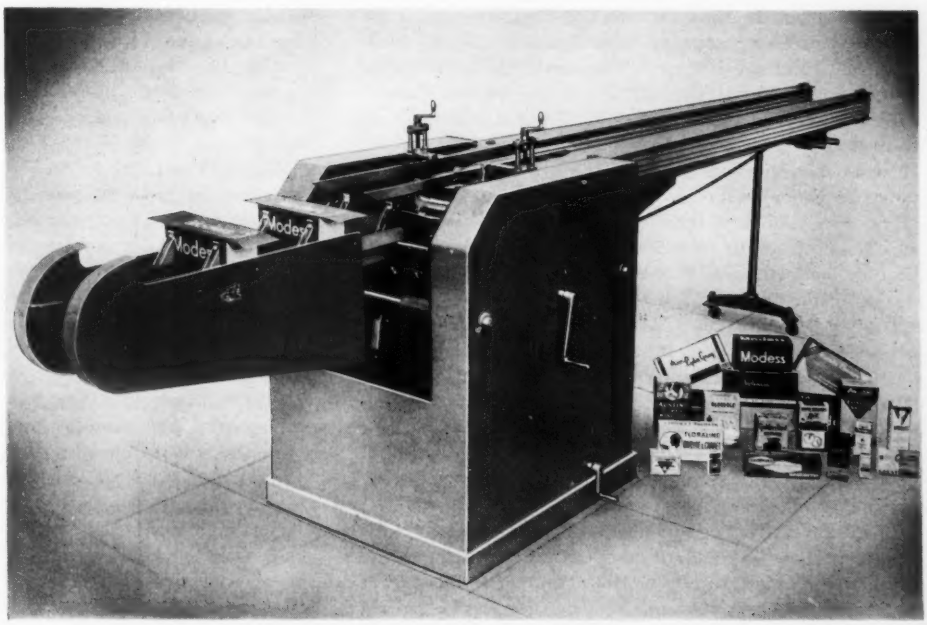
Rotary and jaw type bag sealers usually have sealing members which are made of brass and heated by electricity. Steel members are sometimes used because of better wearing qualities. The thermal conductivity of steel is slow, hence steel members are recommended only for automatic machines which handle bags at fixed speeds. This regular feeding rate permits the adjustment of the heat in-put to the heat out-put.

Most bag-sealing machines are semi-automatic, that is, they operate at the will of the operator. If possible, they should be fed the same number of bags each minute, for variations in feeding speed make for variations in temperature. If the bagging operations are intermittent, it is desirable to accumulate a batch of bags so that the sealing operations can be regular. This regularity in sealing operations permits fairly easy matching of the heat in-put to the heat out-put.

Thermostats are generally used to control the temperature on the sealing and pre-heat members. For reasons given above, sealing machines are furnished with excess heat capacity. This excess heat capacity causes temperature variations in spite of the thermostat. The thermostat cuts off the heat when the temperature reaches a certain point, but all of the heat which is in transit from the heating element to the sealing surface continues to that surface with the result that there is an over-run in temperature. This over-run depends on the mass of the sealing member and the rate at which it is being heated with relation to the rate at which the heat is used. For example, a bag-sealing machine may be furnished with enough heating capacity to heat the sealing members to 500 deg. F. The particular material to be heat sealed requires only 250 deg. F. and the thermostat is set at that point. When 250 deg. F. is reached, the thermostat cuts out, but the heat in transit continues to rise so that an over-run of possibly 20–40 deg. may occur. A lag below 250 deg. F. will probably also occur for the same reason. Both the over-run and the lag result in improper seals.

The remedy for the above condition is to use a rheostat as well as a thermostat. These should be adjusted so that the thermostat turns on and off frequently. This is possible because the rheostat can be set to absorb the excess heat capacity. By this means it is possible to regulate the heat in-put so that it is only slightly more than the heat which is taken away by the bags when they are sealed.

A small signal light should be hooked in with the thermostat so that it will indicate when the current is on or off, which will act as an additional safeguard. A person adjusting the heat (*Continued on page 103*)



This is an automatic carton closing machine which is used on double packages.



Dr. George H. Brown, under whose direction the electronic machine was developed, shows how to "stitch" a seam in vinylite, a thermoplastic material.

Sealing by electronics

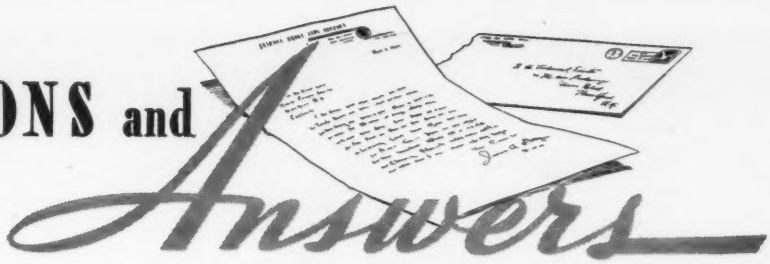
A new development promises to employ radio frequency power to good advantage in the packaging field, particularly with respect to heat sealing. Experimental equipment has been produced by the Radio Corp. of America, Camden, N. J., which bears out these promises. The unit consists of a radio frequency transmitter which generates the power, applied by means of a mechanism that resembles a sewing machine.

This transmitter connects to an ordinary 110 volt A.C. circuit and raises the frequency to as high as 60,000,000 cycles with control of the voltage. To operate the experimental unit requires a 50-watt transmitter, but the principle is applicable in units with a maximum of 15,000 watts. The material to be heat sealed is placed between two electrodes of the machine attachment, and the heat—through the action of the radio frequency power—is generated in the material and is therefore maximum at their interface, that is, where the two surfaces meet. This principle contrasts with the ordinary heat sealing method, in that the latter operates by the penetration of the heat through the film. This means that the maximum heat is applied at the outer surface instead of where the two surfaces meet and diminishes as it approaches the interface. This calls for accurate control of the three factors in heat sealing, namely, temperature, time and pressure, as discussed in the articles on heat sealing which have previously appeared in Modern Packaging. (See discussions by F. S. Leinbach, May and June issues, 1943, also article by James Corcoran in this issue.)

Practically all existing equipment utilizes electrically heated plates or bars which clamp together the two films to be sealed. The heat is thermostatically controlled and the surfaces of the plates may vary from 100 deg. to 500 deg. F. But the setting of the thermostat by no means insures maintenance of the proper temperature, due to the fact that the heating plates may cool as successive pieces of the material are operated on. By the radio frequency method, it is believed, this problem may be overcome. The electrodes are not heated at all—they are placed so that the current passes from one to the other through the dielectric material which is being sealed, with instantaneous and uniform heat throughout the material. At the spot where the two surfaces meet, the thermoplastic coating is fused or welded into a heat seal.

The principle of radio frequency heating has many possible applications, as for instance, in molding of plastic materials and in wood laminations. (See "Molding with Radio Frequency" by W. M. Witty, Modern Plastics, May 1943, also "Heating Wood with Radio Frequency Power" by J. P. Taylor, Transactions of the ASME, April 1943.) Its chief interest for packagers, so far as can be predicted now, will doubtless be in heat sealing of containers made of materials which have been developed since the critical shortages of tin and other important substances have occurred. Thermoplastic coatings, applied to paper and cloth of various kinds, not only impart moisture impermeability to those films, but also provide the means for obtaining a tight seal. It is on thermoplastic-coated materials radio frequency heat sealing operates to best advantage. Experimental research has yet to demonstrate the maximum and minimum limits in point of size of packages which can be handled; but there appears to be no reason to suppose that these will differ widely from the familiar commercial equipment. The new electronic machine applies the power at the meeting point of the two metal wheels or electrodes which are made to revolve by means of a small motor. The material passes between (*Continued on page 110*)

QUESTIONS and Answers



Can odor in adhesive be avoided?

QUESTION: We have been experimenting with a nitrocellulose adhesive in solvent for a food packaging application. There is very little of this adhesive used but we notice that the finished package seems to have a camphor-like odor. What can be done about this?

ANSWER: Your diagnosis of a camphor-like odor is unquestionably very correct because camphor is a very good plasticizer for nitrocellulose. However, this plasticizer is not suitable for use in food packaging because of this persistent odor. I suggest that you obtain your nitrocellulose adhesives with plasticizers which have been specially formulated to be odor free and non-toxic. It is also advisable that you observe the applications to be sure that the solvent is completely eliminated before the final closing or filling of the package and that the adhesive applicator is so regulated and controlled so as to apply the minimum quantity of the adhesive.

Incidentally, it is not possible to aerate the packages to eliminate the camphor-like odor because the volatility of camphor as a plasticizer is so low that its odor cannot be removed.

To prevent coating separating from base

QUESTION: I have noticed that in handling some of the waxed and lacquered coated materials used for frozen foods that the coatings tend to separate from the base especially where folded or creased. Is this a common occurrence and how can it be prevented?

ANSWER: Waxes or lacquers are very often applied to base materials which are affected and penetrated by water. This is true of the base sheet of cellophane, of paper or of similar fibrous materials. Unless the coatings can be forced down into the body of the sheet so that they are physically anchored, it is very possible they will not be well adhered after being thoroughly soaked in water and then folded or creased. Also, the freezing operation helps to lift off the coatings from the wet base. Therefore, it is a difficult problem to obtain adhesion of coatings to base materials which resist the penetration of the coating. Examples of such bases are cellophane, parchment, glassine and certain treated and highly calendered papers. Cellophanes are available with special coatings under the moistureproof films to enhance the film anchorages. Such cellophanes are indicated in frozen food, especially in contact with meat, fish and poultry where the liquids present have a definite softening and penetrating action.

In the case of chemically or physically treated papers, a similar sizing or base coating can be used, although it is more positive to use a base paper which allows the penetration of the coating sufficiently into the surface so that the bond is mechanically anchored. This problem of coating adhesion is also related to the flexibility and toughness of a coating because at low temperatures a brittle coating if disturbed can crack or even flake off.

Address your questions to Charles A. Southwick, Jr., Technical Editor, Modern Packaging, 122 East 42nd Street, New York 17, New York.

Importance of moisture-vaporproofness

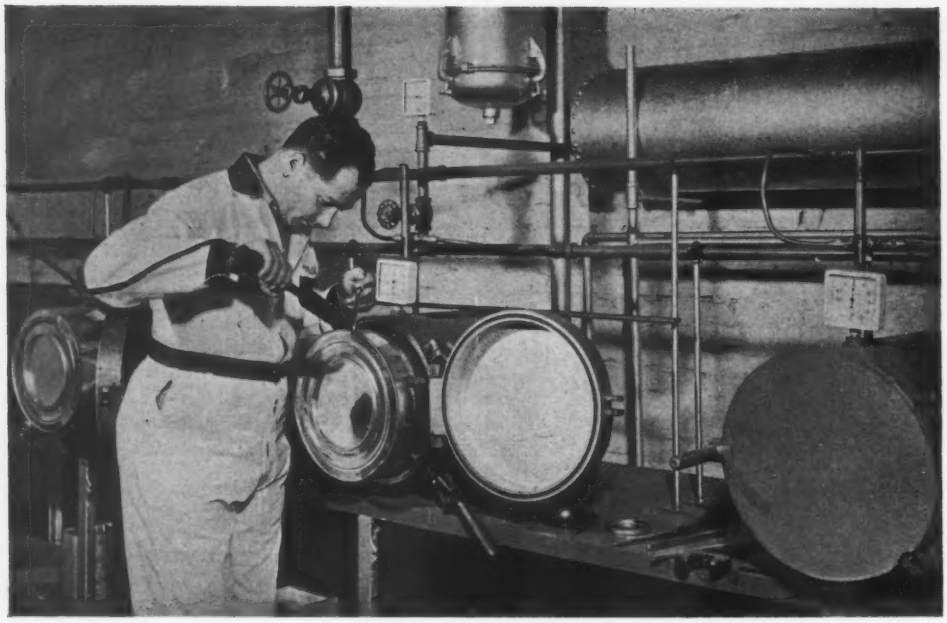
QUESTION: Why is moisture-vaporproofness important in the packaging of frozen foods since there is no water present at 0 deg. F.?

ANSWER: It is quite true that there is no liquid water present at the normal storage temperatures of frozen foods which is in the neighborhood of 0 deg. F. However, water has the unusual property of giving off vapor even in its solid state, that is, as ice. In this case, the phenomenon is not called vaporization but sublimation and is a property possessed by a few other solid materials. For example, ice has a vapor pressure of approximately 1 mm. of mercury at 0 deg. F. as compared to water which has a vapor pressure of about 20 mm. at room temperature.

There are two reasons why this small vapor pressure will cause dehydration or desiccation of the frozen product. One of these reasons is a result of the fact that many products must be stored until the next crop is available and this may mean a time up to one year. This is an unusually long time of storage as compared to many commodities which can be prepared and packaged at any time and whose shelf life may be, therefore, appreciably shorter.

The second reason is due to the fact that some types of low temperature storage warehouses may use so-called blast coolers which have a temperature on the surface of the coils which may be as low as minus 40 deg. F. This type of cooler will freeze out the moisture in the air of the warehouse and this very dry air will try to regain its moisture from the packaged goods. This dehydrating effect in storage can be reduced by using storage facilities which have large cooling surfaces so that there is no need for a high circulation of air or extremely low temperatures on the surfaces of the cooler.

Desiccation is most severe and noticeable in frozen foods on the surfaces in immediate contact with the package. This is a result of the fact that moisture migrates as a vapor through the packing materials at these points and yet the product cannot regain its moisture content at these areas because ice cannot move into these areas to make up the loss of moisture. Therefore, even though there is a large amount of total moisture (in the form of ice) in the package, these particular areas will desiccate and discolor and become tough and unusable.



50-lb. filled cans are punctured and put into these chambers where air is extracted and nitrogen gas injected. As soon as chamber is opened a rivet is dropped into punctured hole and hole is soldered. Remaining oxygen content is less than 2 per cent.

Vacuumizing rigid metal containers

The packing of dehydrated foods for lend-lease shipments and military use has led to the development of equipment for vacuumizing and injecting nitrogen gas into rigid metal containers which does not require too large an investment.

Prior to the war, there were very few facilities for performing this operation except those owned by large companies. A development which has proved of wide interest during the past year is one devised about four years ago by a custom packer and a can maker for American Food Products Co.

This company, at that time, had orders for large quantities of dehydrated milk it packs under the name of Milko from Venezuela and other South American countries where fresh milk is not obtainable in large quantities. The orders were for 50-lb. containers of dried milk, which had to be packed by the vacuumizing and nitrogen gas process.

The problem then was to find a way to pack this milk without too great an investment. The can company was called into consultation. After a careful study of the requirements of the customer, a method was devised whereby a single vacuum chamber was made to hold one container at a time. The container filled with the dried milk completely sealed was then punctured on the side near one end and put into the chamber, where the air is extracted first and then nitrogen gas injected.

The purpose of the nitrogen gas is to diffuse any remaining air in the container and thereby reduce to a minimum the possibility of spoilage in its various forms, depending upon the product packed. The time required to extract the air from the container is about 10 minutes.

Immediately after the nitrogen gas is injected, the chamber is opened and a small rivet is dropped into the punctured hole and hole soldered shut. This is a hand operation, but can be done so quickly after the chamber is opened that very little of the nitrogen content is lost in the operation. In fact, the developers claim that the remaining oxygen content is less than 2 per cent, which is regarded as a safeguard against spoilage.

Vacuumizing set-ups of this type represent an investment of only a few hundred dollars per unit and a battery of half a dozen does not represent a prohibitive cost. Since the original one was built, there have been throughout the country perhaps fifteen such installations. These units are capable of handling the 5-gal. square cans used by lend-lease as well as the round cans shown in the illustration.

It is felt that because of their relatively low cost these units are particularly valuable to the firm which is packing large quantities of dehydrated foods for lend-lease and military shipments, but which does not want to go in too heavily now for vacuumizing and gassing equipment for bulk-size containers which may not be needed after the war and the post-war period.

For this reason making use of a custom packer's equipment is a practical solution. There is still additional capacity available through the custom packer for a company which does not wish to purchase or which cannot obtain equipment for this purpose. The packer of a product which may be a military secret may also find the custom packer a great aid because he does not have to know what the 50-lb. cans contain in order to vacuumize them and inject the nitrogen gas. The containers are delivered to the custom packer completely filled and sealed. Only a small hole needs to be punctured in the metal to perform the operation. Recently a quantity of these containers was processed for Army Ordnance. The custom packer knew they contained certain rubber parts, but he never saw them the whole time the containers were in his plant.

Credit: Vacuumizing process developed by Peerless Packers and American Can Co.



An "Envelope" changed all that!

"Report for new rifles!"... and you hunted up rags and kerosene and spent the next few hours washing off the thick grease... getting ready for that stiff inspection. Yes, that was in 1918, before protective packaging came to the rescue.

Today, the rifle is *out of the package and into the fight!* The rifle is coated with a light oil and inserted in a tough, triple-ply moisture-proof "Boot" or sleeve — really an envelope . . . This is just one of the many ways in which packaging is directly serving the war effort.

You'll find U. S. E. Envelopes protecting sulfa-drugs, sutures, salt and salt tablets, toilet paper, field rations . . . serving as containers for dehydrated food, small parts, shipping papers, humidity indicators . . ."boots" for rifles, and carbines, case liners for overseas shipments, and moisture-vapor-proof — waterproof — grease-proof containers for many ordnance materials.

The long experience that has solved these problems is ready to serve you today in your packaging needs for war . . . *and afterward.*

UNITED STATES ENVELOPE COMPANY
Container Division
SPRINGFIELD, MASSACHUSETTS

U·S·E *protective packaging*

Products of United States Envelope Company include: WAR PRODUCT PACKAGING • TRANSPARENT CONTAINERS • ENVELOPES WRITING PAPER • LINWEAVE PAPERS • NOTE BOOKS • PAPER CUPS • TOILET TISSUE • PAPER TOWELS

U. S. patent digest

This digest includes each month the more important patents which are of interest to those who are concerned with packaging materials. Copies of patents are available from the U. S. Patent Office, Washington, at 10 cents each.

PACKAGE FOR TOBACCO OR OTHER ARTICLES. A. G. Rose (to Rose Brothers Ltd., Gainsborough, England). U. S. 2,318,101, May 4. A package of rectangular cross-section with a long side of the rectangle lying in the top of the package, the outer of the over-lapping edges lying on top of the package and the inner of the overlapping edges lying on the inside of an adjacent side of the package.

LATEX ADHESIVE. L. Sparagen (to Angier Product, Inc., Cambridge, Mass.). U. S. 2,318,126, May 4. A latex adhesive comprising an aqueous dispersion of rubber containing up to about 25 per cent of a lower alkyl ester of crotonic acid in which the alkyl radical contains no more than four carbon atoms.

COSMETIC HOLDER. A. Gelardin, New York, N. Y. U. S. 2,318,152, May 4. A two-piece cosmetic holder comprising a unitary, relatively thick-walled outer sleeve formed with an internal helical groove and a peripheral flange at its lower end, a thick-walled longitudinally slotted, unitary inner sleeve, said inner sleeve having a bottom and a peripheral flange in the plane of its bottom and extending beyond the periphery of the lower end of the outer sleeve.

COMMERCIAL DISPLAY PACKAGE. F. P. Strauch (to W. F. Straub & Co., Chicago, Ill.). U. S. 2,318,434, May 4. A closure device for a container having a reduced neck providing an upwardly facing shoulder and having a bead on the neck spaced above said shoulder.

SHIPPING AND DISPLAY CARTON. E. C. Berg (to Ace Carton Corp., Cicero, Ill.). U. S. 2,318,452, May 4. A shipping and display carton capable of containing a plurality of articles of merchandise.

MERCHANDISING PACKAGE. E. A. Miller (to Miller Cereal Mills, Inc., Omaha, Neb.). U.S. 2,318,557, May 4. A merchandising package comprising a packaged unit, an unwrapped article disposed in inverted position on said unit and having a circular depression formed in its relatively upper side or face.

CONICAL CAP FOR COLLAPSIBLE TUBES. G. L. Lateur, San Francisco, Calif. U. S. 2,317,998, May 4. A collapsible tube having a conical end with a central opening, a conical closure member disposed on the inner surface of the conical end and having a knob projecting through the opening.

ENVELOPE. G. T. Arnold (50 per cent to C. N. Wonacott, New York, N. Y.). 2,318,278, May 4. An envelope comprising companion main sections integrally united along their inner side edges and foldable from its open position to its closed position.

MECHANISM FOR PREPARING POSTAL MATTER. S. C. Herbert, Nunhead, London, England. U. S. 2,318,073, May 4. Apparatus for charging envelopes with postal matter and preparing them for dispatch, comprising a filling table, envelope receiving and adjusting mechanism receiving an envelope from a supply magazine and advancing it into the filling position upon the said table.

CARTON FEEDING AND FILLING SYSTEM. G. B. First and H. Grotewold (to Stokes & Smith, Co., Summerdale, Pa.). U. S. 2,318,208, May 4. A system for conveying and filling cartons.

METHOD AND APPARATUS FOR PRODUCING SHEET MATERIAL. E. R. Derby and F. A. Parkhurst (to Monsanto Chemical Co., St. Louis, Mo.). U.S. 2,318,469, May 4. An apparatus for making continuous webs of thermoplastic material which comprises in combination pressure feed means provided with heating means.

PROCESS FOR THE MANUFACTURE OF FILMS, FOILS, BANDS AND THE LIKE FROM CELLULOSE SOLUTIONS. E. Czapek, New York, N. Y. U. S. 2,318,552, May 4. A process for the manufacture of films, foils, membranes, bands and the like from solutions of cuprammonium cellulose.

EXOTHERMIC DEVICE. F. Racen (to W. G. Shelton Co., St. Louis, Mo.). U. S. 2,318,420, May 4. A container and an exothermic substance therein, said container comprising a pocket-like member formed of a material which readily transmits to said substance moisture applied to the exterior surface, one wall of the container being provided with a coating of substantially moistureproof adhesive fluid.

SHIPPING CARTON. B. O. Smith, Kennett Square, Pa. U. S. 2,318,973, May 11. A carton consisting of an open-ended exterior retainer element forming the outer sides, front and back of a carton and having top and bottom edges, and a pair of separate and unattached interior compartment elements forming part of top and bottom of the carton.

CONTROLLED DRIP MILK BOTTLE. B. A. Jackson, Oakland, Calif. U. S. 2,318,611, May 4. A glass milk bottle having a neck means for controlling drip thereof.

CONTAINER. G. C. Erb (to American Can Co., New York, N. Y.). U. S. 2,318,603, May 11. A sanitary container adapted to be opened by a cutting tool without contact with the contents.

INVOICE CONTAINER. A. J. Hopkins (to Gaw-O'Hara Envelope Co., Chicago, Ill.). U. S. 2,318,997, May 11. An invoice, container whereby an invoice may be attached to an envelope or the like containing the product invoiced, which comprises a sheet of fibrous material folded into tubular form and flattened to provide a panel-like front wall.

CASE FILLING MACHINE. A. C. Davis (to. F. A. Davis & Sons, Baltimore, Md.). U. S. 2,318,598, May 11. A machine for filling cases with bottles, having a bottle conveyor, a case conveyor below said bottle conveyor and extending at right angles thereto.

CASE FILLING MACHINE. A. C. Davis (to F. A. Davis & Sons, Baltimore Md.). U. S. 2,318, 927, May 11. A machine for filling compartment cases with bottles.

FOLDING BOX. W. E. Stonecypher, Los Angeles, Calif. U. S. 2,319,371, May 18. A folding box comprising integrally connected top, bottom, front, rear and side walls, leg extensions formed integral with and projecting from the ends of said front and rear walls.

CARTON. R. W. Speir, Jr. (to Reynolds Metals Co., Richmond, Va.). U. S. 2,318,641, May 18. A container comprising a continuous square tube body portion having vertical side edges, flaps integral with said body portion, vertical corner battens secured inside each vertical side edge, horizontal end battens secured to said vertical battens, two metal straps secured to said bonds along each vertical side edge.

TUBE. C. A. Tomes, Wilmington, Del. U. S. 2,319,275, May 18. A container comprising a flexible tube, a ring having an inner groove enclosing the tube, and a resilient closure disk positioned within the tube and ring, the edge of said disk forcing the wall of the tube into the groove and holding it there in sealed relation.

PASS PROTECTION

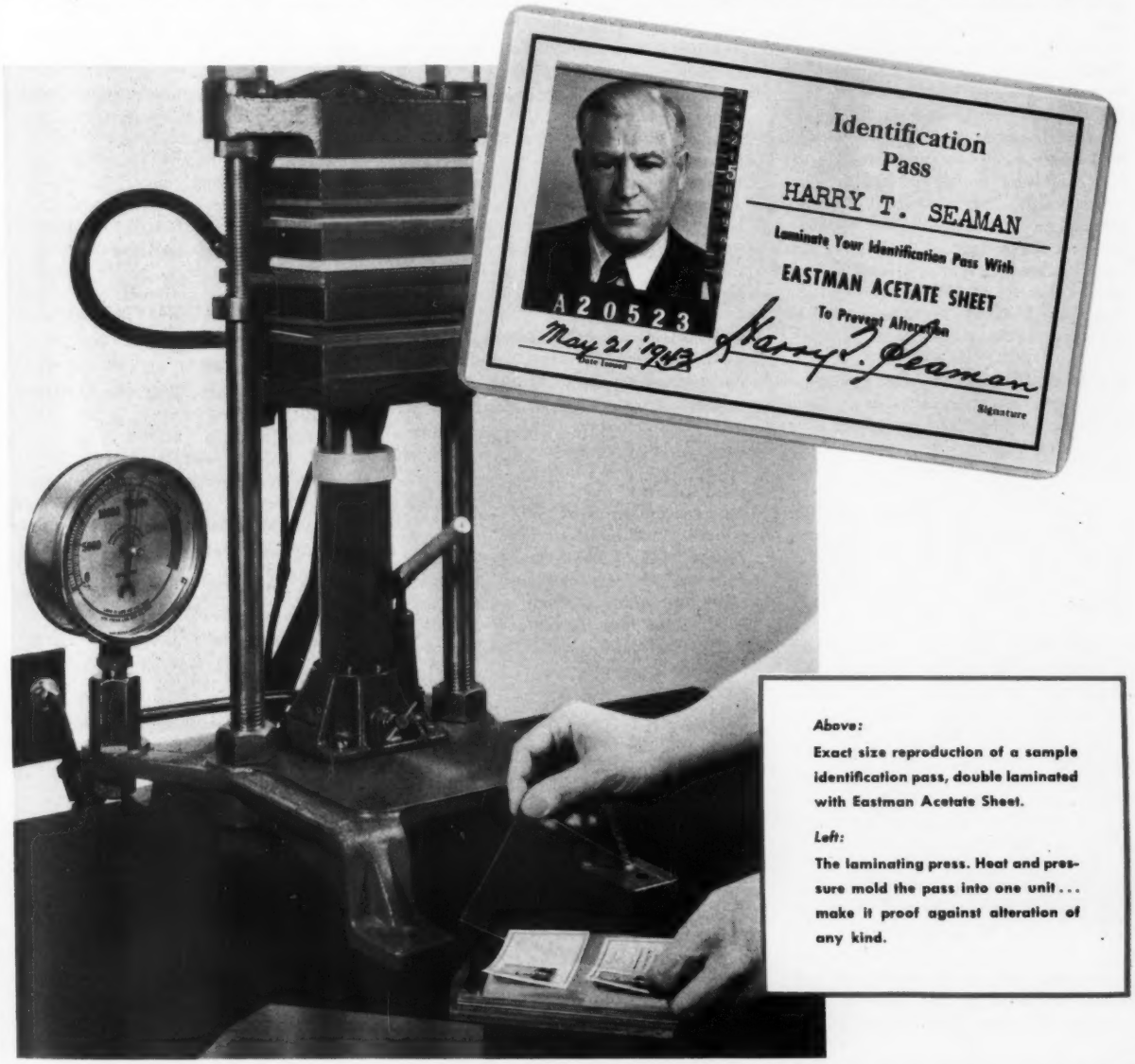
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An identification pass is a small thing—until it is tampered with. Then the effects are far-reaching.

Double lamination of the photographic pass with .015 transparent Eastman Acetate Sheet provides the protection against counterfeiting essential to war plants and government agencies. Under heat and pressure, Eastman Acetate Sheet laminates and completely molds the pass into one unit, requiring no additional bonding agent . . . makes it proof against alteration and change of any kind. This is but one of many ways in which Eastman Acetate Sheet has successfully demonstrated its wartime usefulness . . .

Our production facilities are operating at full capacity to meet other priority orders as well—for such essentials as goggles for tank crews and other ground forces . . . for eyepieces for civilian gas masks . . . for map and plan protection.

For complete information regarding Eastman Acetate Sheet Pass Protection, write to the Chemical Sales Division, Eastman Kodak Company, Rochester, N. Y.



Above:
Exact size reproduction of a sample identification pass, double laminated with Eastman Acetate Sheet.

Left:
The laminating press. Heat and pressure mold the pass into one unit . . . make it proof against alteration of any kind.

EASTMAN ACETATE SHEET *ATTRACTS • PROTECTS • SELLS*



WASHINGTON REVIEW

by R. L. Van Boskirk

● **New Chairman, Container Coordinating Committee**—Henry A. Wolsdorf has succeeded Albert H. Luhrs as chairman of the Coordinating Committee. He had been vice-chairman under Luhrs and a member of the Containers Division since its inception 17 months ago. He was deputy chief of the Packing and Packaging Branch of the Procurement Division of WPB when it was consolidated with the Containers Division last October. Before serving with WPB he had served for eight years as Assistant Director of Package Research Laboratory, Rockaway, N. J., and is still listed that way.

Mr. Luhrs, after serving the government as an original member of the Containers Division and as chairman of the Coordinating Committee since its beginning, has set up his own office in the Shoreham Building in Washington to serve as a technical consultant.

● **Increased Use of New Burlap Bags**—The number and quantity of products which can be packed in new burlap bags are increased under the terms of Conservation Order M-221, as amended June 11 by WPB. This reflects an improvement in the supply of burlap and, in addition, the availability of heavyweight burlap. Heretofore only lightweight burlap has been available for bag making.

● **Import Ban on Burlap**—Acting under authority of Order M-47 (Burlap) the WPB has ordered that no burlap which was purchased by private dealers after June 7, 1943, be imported. The move was found necessary as preliminary to establishment of more direct control over burlap imports—all of which are now shipped from Calcutta—in order to make sure of an adequate supply for military and agricultural needs. A telegram reading as follows was issued to all burlap importers: "The following direction is issued pursuant to paragraph (b) (3) of Order M-47: Until further notice, no importations will be permitted of any burlap purchased by any importer after the close of business June 7, 1943."

● **New Order Separates Paper Shipping Sacks from Textile Bags**—Limitation Order L-279, issued June 11 by the WPB, instead of Order M-221, now controls paper shipping sacks for packing foods, plaster, seeds and other specified products. This move was taken to separate the paper shipping sacks from the textile bags in anticipation of the establishment of specifications and other restrictions for paper shipping sacks.

Under L-279, manufacturers, processors or packers of certain products may pack their products only in specified bag sizes. The products are: beans, cement (standard portland), flour (milled wheat), meal, plaster (gypsum), potatoes, processed feed (mixed, mill), rice, salt, seeds, starch and sugar. The order covers any single-wall, duplex, or multi-wall *paper* sack designed for use as a *primary* container for packing a *particular* commodity for storage or shipment.

● **Packaging Institute Asked to Save Containers**—Food processing and packing put a severe pinch on existing packaging supplies at this time of the year. To carry this situation "over the hump," F. S. Leinbach, assistant director, containers Branch, WPB, has written a letter to all Institute members enlisting voluntary cooperation in a conservation program. The letter was written at the suggestion of Joel Lund, president of the Institute. Proposals for this cooperative effort are: 1. Do not overpackage. 2. Use the largest container practical. 3. Get maximum re-use from containers, particularly fibreboard shipping boxes. 4. Pay more attention to paper salvage. 5. Do not order more containers than your absolute, immediate, minimum requirements.

"WPB orders have been written, more may have to be written, but the members of this Institute, their suppliers, distributors and customers, acting now, are the only ones who can give the whole solution, give the right answers, and make them stick," Mr. Leinbach wrote.

"If immediate action were not imperative, we never should have bothered you. If there were not many obstacles and objections, we should not have needed your help, so please do your best and do it now."

● **No Compulsory Grade Labeling of Canned Goods**—MPR-306 (Certain Packed Foods), Amendment 8, effective May 18, 1943, removed the OPA requirement of grade labeling the 1943 pack of canned fruits and vegetables and their juices. The Office of Price Administration has substituted an alternative. Essential points of the plan are:

1. Canners must continue to grade their 1943 pack in accordance with the United States Department of Agriculture grades and canners' maximum prices will continue to be set by grade.
2. Canners and wholesalers must indicate on their invoices the government grade of the product sold.
3. Retail community-wide dollars-and-cents ceilings, being issued by OPA in principal shopping centers throughout the country, will list canned goods by grade, showing the housewife at a glance the grade and the maximum price of a particular brand.

● **Micro-Crystalline Wax Placed Under Allocation Control**—Order M-195, May 20, 1943, to take effect July 1, 1943, placed micro-crystalline wax and its blends which are petroleum products, under allocation control by the WPB. The order provides that no supplier may use or deliver wax, nor can any person accept delivery, except as specifically authorized by WPB. The order provides for authorizations to suppliers to make deliveries on a quarterly basis. Provision is made on Form PD-600 for authorization to use or accept delivery of wax during any calendar quarter. Form PD-601 is to be used by suppliers for authorization to make deliveries of the wax.

● **Further Decline in Pulp Inventories**—In announcing the June wood pulp allocations, the Pulp and Paper Division of WPB stated that the consumption of wood pulp by the paper-making industry continued at relatively high levels during April, causing a further decline in pulp inventories. With the exception of news-grade unbleached sulphite and groundwood, the typical non-integrated consuming mill now has an inventory of only about 30 days pulp.

Receipts of woodpulp by paper mills in the United States during the first four months of 1943 were 22 per cent below



CAN-OPENER ...ARMY STYLE!

Maybe it isn't regulation . . . but there's been many a can opened in an Army kitchen with one quick swipe of a cleaver...just as a bayonet has always been the favorite can opener of men in the field.

But the end of the line is not the only place where containers carrying food for our fighting men get rough treatment. Crown Cans have proved their ability to take it in the holds of cargo ships . . . on primitive railroads . . . and jouncing around in motor transport over roads that have no right to the name!

A very large proportion of Crown's production now goes to the armed forces . . . to carry the food to feed our own men and our Allies. And from every theatre of operations in this global war comes the report that Crown Cans are doing their duty...protecting and preserving food for fighting men all the way to the front lines.

CROWN CAN COMPANY, New York • Philadelphia, Pa., *Division of Crown Cork and Seal Company,* Baltimore, Md.



CROWN CAN ★ ★ ★

the receipts for the same period in 1942 and may decrease to 25 per cent below by the end of the year, according to a recent announcement of WPB. It is expected that paper production probably will decline in about the same proportion.

● **Help for the Pulp and Paper Manpower Problem**—With the publication of the Activities Occupational Bulletin, No. 27, which lists the production of pulp, paperboard and certain converted products as essential activities and many workers in this industry as in essential occupations, the Pulp and Paper Division believes many of its manpower problems will be materially reduced.

The purposes of the recently published War Manpower Commission bulletin which was announced in these columns last month were to extend its coverage with relation to pulp, paper and paper products; correct some inconsistencies; list the types of paper stock and paperboard made from pulp, converted products made from the paper and paperboard and the production of other materials for shipping and preserving essential products; and also to list the essential occupations involved in making pulp, paper, paperboard and converted products. When the Committee of Essential Activities of the War Manpower Commission considered the actual making of paper or paper stock from pulp, it included only those types regarded as the most important to the war effort, and listed them, The list includes such essential paper products as container board, boxboard and wet machine board, shipping sacks stocks, glassine, greaseproof and waxing papers, as well as other indispensable types.

The making of a variety of other types of paper, including newsprint and book stock, have not been added to the list. The various end products include only those considered essential, such as packing materials for necessary products including foods. Certain sanitary tissues are also covered in the WMC lists, as well as liquid-tight containers and closures, including paper milk bottles and caps.

● **Elimination of Bottle "Carryouts"**—At a recent meeting of the Non-Alcoholic Beverage Industry Advisory Committee and WPB officials in Washington, a representative of the Containers Division of the WPB pointed out the necessity of eliminating the manufacture of carryout cartons for bottles to conserve paperboard for boxes needed for military and lend-lease purposes and for packing foods.

● **Corrugated Container Wastepaper**—MPR-30 (Paper, Paper Products, New Materials for Papers and Paper Products), Amendment No. 4, effective May 27, 1943, redefines the grade of corrugated container wastepaper known as "Old Corrugated Containers" to include any mixture or combination of "jute," double-lined kraft and 100 per cent kraft boxes. The ceiling price on this grade, as newly defined, is $23 per ton, f.o.b. shipping point.

In addition, the old grade of "Old Kraft Corrugated Containers" has been eliminated from the regulation, and is superseded by a new grade called "Old 100 per cent Kraft Corrugated Containers," which may not contain any non-kraft materials whatsoever. This amendment is an attempt to relieve a shortage of corrugated container wastepaper which threatens to handicap production of containers necessary for overseas deliveries of war materials.

● **Raw Materials Costs**—MPR-187 (Certain Paperboard Products), Amendment No. 4, effective May 29, 1943, provides that raw material costs, one of the factors used to determine ceilings for manufacturers of various paperboard products under the formula in MPR-187 must be computed until August 1, 1943, at levels no higher than the maximum prices in effect on March 31, 1943, for these raw materials. This is to prevent any increases in raw material costs subsequent to March 31, 1943, from being passed on to the consumer by the manufacturers of paperboard products. Ceilings of the manufacturers are based on raw material costs, conversion charges and margin. Rates of conversion charges and margin already are frozen at October 1941 levels. Under the present provision any increases in ceilings of raw materials between March 31 and August 1, 1943, must be absorbed by the manufacturers.

● **Glass Container Industry Committee**—The appointment of a national industry advisory committee to represent the glass container industry has been announced by the Office of Price Administration. The committee of 16 men, representing all regions and types of glass container production will cooperate with OPA in studying the industry's pricing problems.

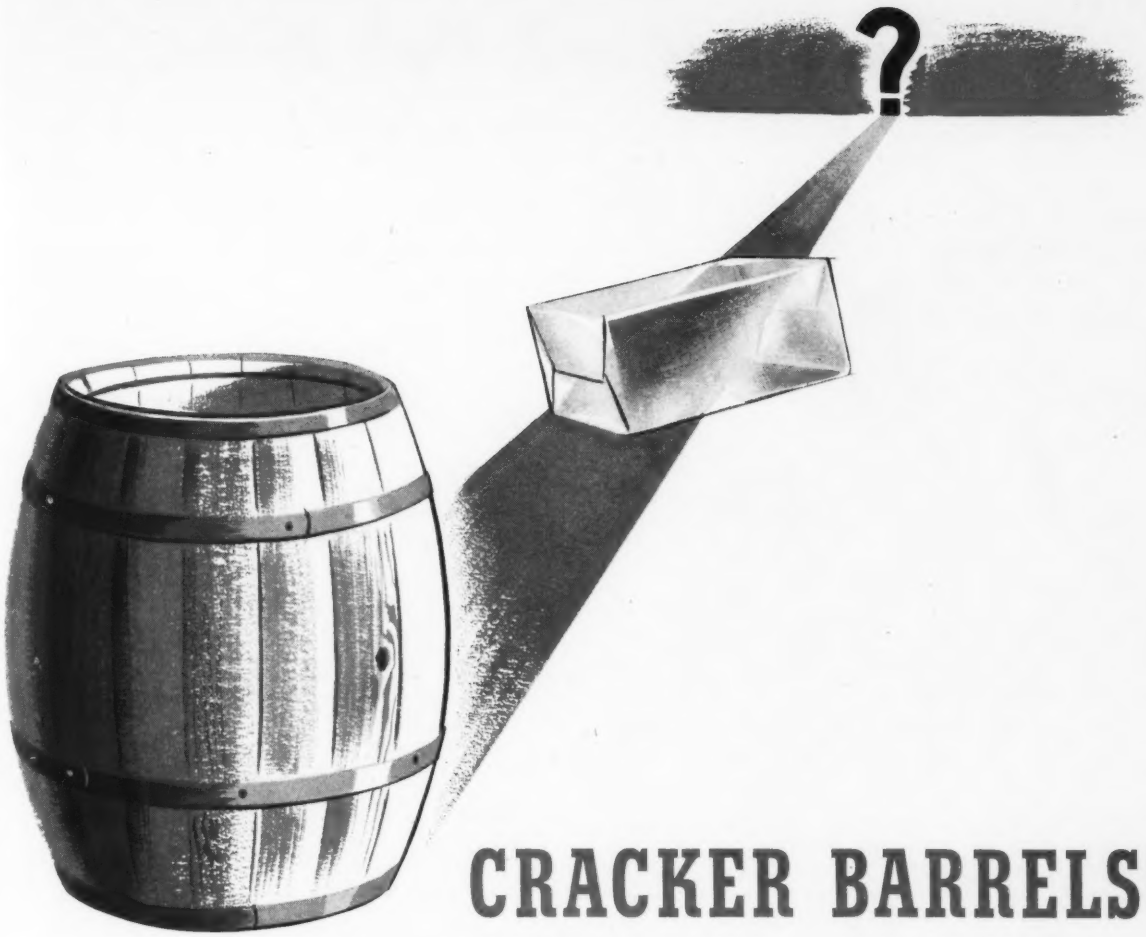
● **New Controls over Food Processing Machinery**—New controls over production and distribution of new and used processing machinery for food, beverages and tobacco are established by Limitation Order L-292, issued June 5 by WPB. The new order permits WPB to integrate production and distribution of food processing machinery and equipment with the food program of the War Food Administration and thus make certain that sufficient processing machinery is manufactured and properly distributed to meet the food, beverage and tobacco demands of the armed forces, Department of Agriculture, Office of Civilian Requirements and Lend-Lease. It provides for the establishment of production quotas on certain types of food processing machinery as the need for such specific quotas develops. If such quotas are not set up until Sept. 30, 1943, manufacturers may produce the quantity of equipment they produced in the same calendar period of 1942. Commencing Oct. 1, 1943, and for the year ending Sept. 30, 1944, in the absence of any specific production quotas, manufacturers may produce up to 50 per cent of their average yearly production during the base period 1939 to 1941. In addition to setting up future production controls, L-292 prohibits the manufacture of certain items of food processing machinery and equipment considered to be relatively non-essential to the war effort and of which a fairly sizable stock of used equipment is available. The new order eliminates many duplicate styles and sizes of dairy, egg and poultry equipment and simplified the number of styles of canning equipment.

● **Survey of Requirements for Containers and Closures**—In a letter to certain manufacturers of containers and closures, Roswell C. Mower, Director of the Containers Division, WPB, has requested manufacturers to supply periodic reports on their production or shipments and consumption of various types of materials and closures. The reports are to be filed, on specified forms, with the Program Section, Containers Division, WPB, Washington, D. C. Manufacturers with more than one plant should file separate reports for each plant. The information obtained will be used to determine the amount of material required for the manufacture of various containers and to check the progress of various programs.

The products covered by the WPB form numbers follow:

Product	WPB Form Number
Production of closures, shoulder seal and top seal jar rings, and jars for home canning	1317
Plywood, wirebound, and nailed wood boxes, crates, and drums (production)	2614
Baskets and hampers (production)	2615
Cooperage and cooperage stock (production)	2616
Paper containers and closures (production)	2526
Metal cans (shipments)	2707
Fibre cans and tubes (production and materials consumption)	2759
Corrugated and solid fibre shipping containers (production and materials consumption)	2760
Cups, pails and paraffined and waxed cartons (production and materials consumption)	2761
Folding cartons and set-up boxes (production and materials consumption)	2762
Milk bottle caps and closures (production and material consumption)	2764

● **L-103 Amended**—Limitation Order L-103 as amended June 8, 1943, clarifies and specifies the dates before which certain types of non-standard glass containers must be manufactured in order to be used for packing any product which has not been made the subject of standardization and simplification.



CRACKER BARRELS?

War-engendered conceptions of packaging multiply in dizzying tempo. Already—pre-war—and present—packages are casualties. On the day of Victory, some packages will be as old-fashioned as sulphur and molasses, cracker barrels, and pot-bellied stoves! . . . Pacing packaging's swift strides into the future, Palmer engineers are evolving revolutionary techniques that anticipate many a merchandising problem-to-be. Ready for Palmer drafting boards are new machines—more efficient, faster, more compact, more completely automatic—designed to handle new products, new packaging materials, new adhesives and sealing methods. Soon it will be too late to catch up. Now is the time to discuss together "the shape of things to come"—lest tomorrow finds us unprepared.

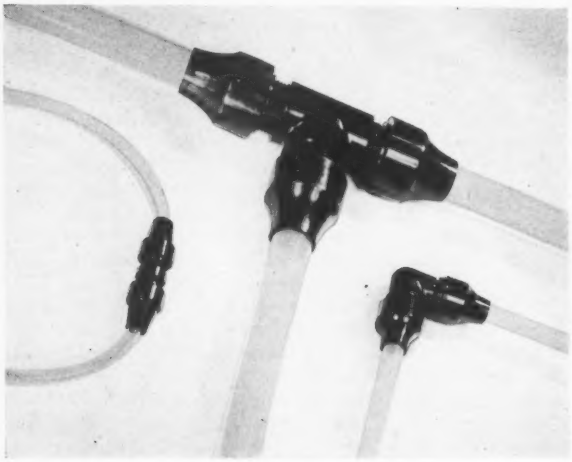
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PACKAGE DEVELOPMENT LABORATORY ★ SPECIAL MACHINERY MANUFACTURERS

Equipment and Materials



SARAN TUBING AND PIPE

At present, the need for metal pipe and tubing is many times what it would be in peacetimes. This indicates that the only solution to the problem is the utilization of new working materials that are able to fulfill the requirements of the trade. One practical solution to a portion of the problem is offered through the development of new plastic pipe and tubing. The Dow Chemical Co. is making pipe and tubing of Saran, a thermoplastic, and the pipes and tubings possess the ability to fulfill many operating demands made on metal pipe.

The flexible Saran tubing has a wide range of industrial and commercial applications. It possesses the same high chemical resistance found in Saran pipe and is non-corrosive and non-scaling. A suggested application for the tubing would be for multiple-head bottle fillers.

The tubing accommodates both high and low pressures, withstands freezing and is heat resistant to 170 deg. F. Flaring of Saran tubing can be handled simply by using standard equipment in most cases. It can be bent without kinking to a radius of from two to five times its diameter, depending, of course, on its size and wall thickness. Unlike metal tubing, however, Saran will not take a set or retain a bent shape unless heated and cooled in the desired form. Saran tubing fittings are made by the injection molding process, which assures clean cut threads. The fittings are available in sizes to match the standard Saran tubing diameters and can be used with all tubing employing flare type fittings. Metal and other flare type fittings may also be used with Saran tubing.

Saran pipe is produced by a modified extrusion process. In appearance, it greatly resembles metal pipe, being a smooth, round, black material with dimensions conforming to standard heavy iron pipe specifications. Although it appears to be heavy, such is not the case. It is only $^1/_4$ the weight of iron pipe, a feature of value when it comes to suspension, installation and shipping problems. The pipe has a high degree of chemical resistance and commercial acids and alkalies do not affect it. The pipe, however, is not recommended for exposure to severe freezing conditions, but it operates successfully at temperatures as high as 170 deg. F. It may be speedily welded and either power or hand-driven standard pipe threading tools may be employed in threading the pipe. Standard fittings for Saran pipe are available in sizes from $^1/_2$ in. through 2 in. Pipe from 2 in. to 4 in. inside diameter has already been developed and is ready for the market. Fittings for the larger sizes are expected to be available soon. Although Saran pipe, tubing and fittings were developed by The Dow Chemical Co., a number of manufacturers have been furnished complete instructions on successful operating techniques and designs of proper equipment so that these thermoplastic products are available on an expanding scale to solve readily the problems caused by the lack of metallic pipe and tubing.

COMBINATION PLASTIC AND PAPER CLOSURE

A new combination closure has been developed by The Closure Corp. of New York City. It is made of an annular plastic retaining ring which holds firmly a heavy liner to the top or mouth of the glass container. Since the liner serves also as the top of the closure, acting as a closing disk, it is heavier than conventional liners. The top surface of the disk can be used either for printed matter or for color contrast with the plastic ring or the container itself.

The plastic ring, serving the purpose of a solid plastic cap, is economical and conserves the use of plastic molding materials, thereby spreading the available supply for closures. Phenolics, ureas, cellulose acetate or styrene may be used.

Three general adaptations of the closure have been developed—the threaded or screw type for containers with a CT finish, the snap-on type for containers with a bead finish and the slip-on or friction fit type for containers with a plain tapered finish.

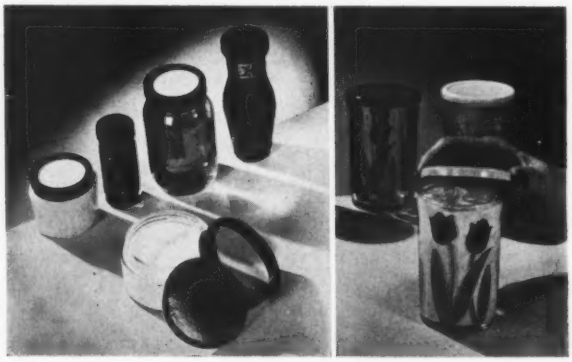
An unusual feature of the closure is the method employed to produce the retaining rings. These are molded concentrically in cone form, which makes possible the molding of from 2 to 10 rings of different sizes in the same cavity. This results in a saving of steel for molds, machine time in molding and labor as well as plastic.

The cone principle is the key to the molding of the rings by compression for thermosetting plastics. If the rings were molded in individual cavities, a flashing would remain in the center and would have to be removed. In the cone, however, there is no flashing for when the mold is closed, there is metal-to-metal contact between the rings which are then separated.

Injection molding the rings in cone form from thermoplastics is possible also. But when taken from the mold, the rings remain in a solid cone and are cut apart with circular knives in one simple operation.

Both thermosetting and thermoplastic materials can be used for the threaded rings. For the snap-on and slip-on types, thermoplastics are used in order to secure the desired flexibility.

(*Continued on page 90*)





A COLORFUL FLARE FLOATS IN THE AIR

GIGANTIC bursts of billowing smoke . . . smoke that is colored . . . smoke that signals a telling story . . . rise from the seas and from the fields of battle wherever American men fight the enemy. The same Heekin colors used to produce for you a peace time metal lithographed package . . . to help sell your product . . . produce these signal clouds of different colors. Thus, the gigantic Heekin factories are virtually all-out in war production. But right now you may be looking ahead to a newer, more colorful metal package. Maybe now is the time to plan your sales and merchandising program for the future. Perhaps we can be of service . . . there is no obligation.

THE HEEKIN CAN CO., CINCINNATI, O.

HEEKIN CANS

Lithographed

WITH HARMONIZED COLORS

NON-RUBBER, WATERPROOF SEALING TAPE

A waterproof, pressure-sensitive cloth tape, which is manufactured without the use of rubber by Mystik Tape Division of the Chicago Show Printing Co. is said to be finding uses in war production in a variety of applications. It is non-toxic and therefore available for sealing packages of medicine, blood plasma foods of all sorts, surgical dressings and similar products.

FORMING AND FILLING MACHINE

About ready to launch is a machine originally developed in the United States and built in Stockholm, Sweden, intended for the forming, wax coating, filling and capping of a paper milk bottle. This machine has been transplanted to the United States and, in the opinion of those who have seen it, may possibly function for many other types of liquid products and dry stuffs. It forms a container of one-quart capacity, but, of course, the same principles can easily be adapted to larger or smaller sizes. The container consists of a cylinder with a side seam and a "bullet" base. For the quart-size, the blanks which form the cylindrical part of the container measure approximately 10 in. by 11 in. These are already printed with the product design, identity, etc., and properly scored to form the ingeniously contrived top. The stock for the base is of similar material in strip form slightly over 4 in. wide. The seal is a metal tape of soft steel which can be lacquered any color.

In actual operation, it is believed by the builders of this machine that it will form and fill milk containers at the rate of 40 per minute. This speed would probably vary somewhat with other products. The stock used for milk containers is the customary bleached manila sulfite and the machine applies a coating of paraffin wax. Containers for other products could be fashioned by this machine from other kinds of blank stock so the makers claim, and the coating could be varied in accordance with the requirements of the contents.

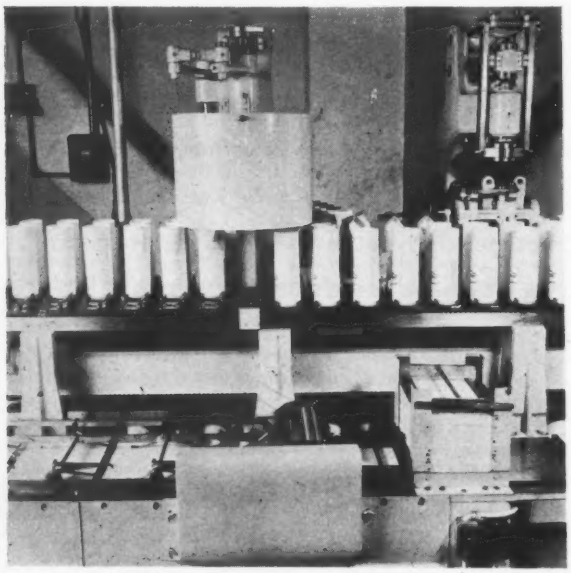
The operation begins with the cylinder blanks which are fed automatically from a stack or magazine from which they pass through the gluing apparatus. The blank travels some little distance before it reaches the mandrel which forms the cylinder. This time interval permits the adhesive to "cure" a bit before the seam clamp comes down on the seam. The cylinders are shaped around mandrels about 3 in. in diameter. The turret of mandrels reminds one of the cylinder of a six-shooter. Before the turret starts to revolve, the paper stock is formed into the cylindrical portion of the container around the mandrel and a clamp—simple and tricky—comes down to set the seam. These mandrels are wired for a heat-sealing process if necessary.

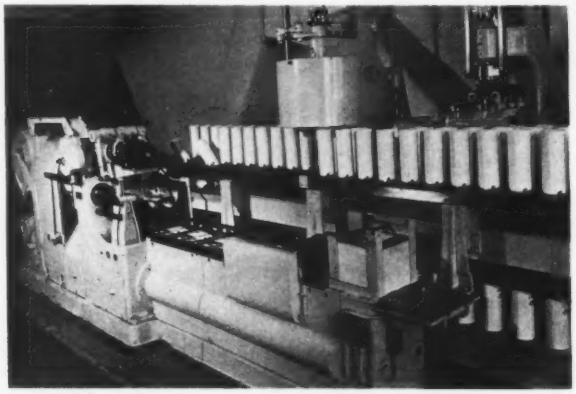
The bottom of the container, blanked out from a reel of the bottom stock, is cut and pushed into the cylinder after which it passes into a device which spins in the bottom. After the spinning process takes place, the next operation puts the finishing touch on the glued bottom.

Now the container passes to the first of three conveyor chains, the first of which serves to dry the seam, the second carries the container through the paraffin spray which coats it inside and out and the third permits it to cool sufficiently before it reaches the filling and sealing apparatus. The problem of sterilization is provided for by the heat at which the paraffin is applied.

The containers travel a long stretch, but that stretch is compressed into a very compact mechanism through the device of utilizing the upper and lower stretches of the chain. On the first, or drying line, traveling on the under side of the belt, the container passes along the exterior of the paraffin spraying tank, using the heat from the paraffin tank to assist in drying the seam. When it reaches the center of the top side of this chain, it is moved by mechanical fingers to the middle chain on which—the downbeat—it is carried through the spray bath. Then, when it arrives at the top center position, another set of mechanical fingers moves it to a third chain. On this it travels a distance long enough to cool off before reaching the filling apparatus and is carried thence to the sealer where the metal cap is crimped on. Automatic warning signals prevent any filling being done if there is no bottle on hand to receive the contents. A similar automatic device insures no waste of the metal-capping tape for the capping apparatus does not operate unless there is a bottle in place.

Credits: Patents and design by A. Karlsson-Ygger, New York City. Machine building by A. B. Gerh. Arehns Mekaniska Verkstad Stockholm, Sweden. Represented by Arenco Machine Company, Inc., New York City.











THE MIGHTY FOOD NEEDS OF MIGHTY LABORS MUST BE MET

NEITHER making a torpedo nor firing one is any pink tea. It takes tough bone and sinew and smart coordination of hand and eye. And that kind of fitness calls for plenty of hearty, nourishing food.

That's where Pneumatic Packaging & Bottling Machines are doing a job—a big job. They're turning out tons of properly packaged foods — medicines, too — to keep our men fit on both the production and fighting fronts.

At the Pneumatic plant today, we're largely engaged in making ordnance equipment. Speed and accuracy in operation have always made Pneumatic Packaging & Bottling Machines famous "producers." And these same qualities are built into the ordnance machinery that Pneumatic is making for Uncle Sam.

Speed is the order of the day. And that is just where the sound design, advanced engineering, and more accurate machining of Pneumatic Packaging Equipment come into their own — whether it be in handling ordnance, medicine, or foods.

PNEUMATIC SCALE CORPORATION, LTD., 71 Newport Avenue, North Quincy, Massachusetts

New York, Chicago . San Francisco . Los Angeles

PNEUMATIC
PACKAGING & BOTTLING MACHINERY

If it's a packaging problem, consult Pneumatic first. Semi-automatic and fully-automatic machinery.

CARTON FEEDERS
BOTTOM SEALERS
LINERS
WEIGHERS
TOP SEALERS
TIGHT WRAPPERS
also
SPECIAL COMBINATION PACKAGING UNITS

Plants and People



Left to right: Lt. Commander M. B. Lowe, U. S. Navy; Miss Estella L. Koenig; Lt. Col. Frank W. Parker, Jr., U. S. Army; H. Lyle Greene; Alfred E. Davey; J. L. Ferguson.

Army-Navy "E" Awards, given in recognition of outstanding performance in war production, were presented to:

Alloy Steel Gear & Pinion Co., Chicago, Ill., April 12. The company executives are: president, Alfred E. Davey, executive vice-president, J. L. Ferguson, Sr.; vice-president, H. Lyle Greene; secretary-treasurer, Estella L. Koenig.

Defiance Machine Works of Toledo Scale Co. received this award May 11 for the production of vital machine tools necessary in the mass production of guns, tanks and planes.

The Chicago Ordnance District of the U.S. Army has awarded the Army Ordnance Banner to the management and employees of W. C. Ritchie & Co. for "Meritorious Production" of war goods.



D. K. Ballman

The Dow Chemical Co. announces the organization of a division for the development of new chemical products for present-day and post-war use. D. K. Ballman, long associated with the company in product development and technical service, will head the new division, which will be headquartered in Midland, Mich., and staffed by a group of experts selected for their technical knowledge of the company's products and specific industries.

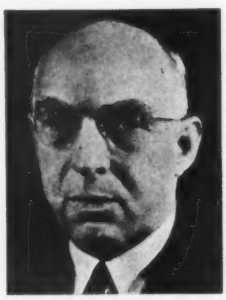
National Paper Box Mfrs. Assn. elected the following officers at its Chicago conference, May 16–18: president, Walter P. Miller, Jr., Walter P. Miller Co.; vice-president, A. M. Bond, Consolidated Paper Box Co.; treasurer, Edward F. Hager, Service Paper Box Co. William R. Kreeger continues in the appointive office of secretary.

William A. Weaver has been elected president of Arabol Mfg. Co. to succeed the late Henry Kohler who died May 17 in New York City after a brief illness. Mr. Kohler was a member of the company staff since 1922.

Dr. R. P. Dinsmore, pioneer in rubber research and development manager of The Goodyear Tire and Rubber Co. since 1939, has been elected vice-president of the company in charge of research and development. Dr. Dinsmore's appointment came as dedication ceremonies for Goodyear's new $1,325,000 research laboratory were under way. Until a month ago, Dr. Dinsmore served as assistant deputy director of the government's synthetic rubber program. He has been with Goodyear since 1914 and directed the research that resulted in Pliofilm and many other products.

Harry E. Gould, president of The Aldine Paper Co., New York City, has purchased the Reinhold Card & Paper Co. The two companies will be entirely separate and independent of each other; the former company will continue its specialty paper business while the new firm of Reinhold-Gould, Inc., will stock and distribute mill brand paper for the printing and allied industries.

Package Machinery Co. announces receipt of orders for three high-priority carton wrapping machines to wrap metal containers containing carbine bullets in waxed paper as protection against abrasion and destructive moisture. These are intended for companies whose facilities have been converted to munition manufacturing. Roe S. Clark, vice-president and treasurer of the Package Machinery Co., has been re-elected president of the National Metal Trades Assn. at its 45th annual convention and production conference. Other officers re-elected were: first vice-president, H. H. Kerr, and second-vice president, George A. Sayler.



Roe S. Clark

Carlton Mellick, formerly associated with Miehle Printing Press & Mfg. Co., has been appointed sales manager of The Fred Goat Co., Inc., Brooklyn, N. Y., and its subsidiaries, Goat Metal Stampings, Inc., and Swing-O-Ring, Inc.

Celanese Celluloid Corp., Plastics Division of Celanese Corp. of America announced the appointment of David S. Hopping as director of sales development; W. Richard Donaldson, director of market research; William F. Cullom, director of sales of the Film and Foils Division. Miss Harriet E. Raymond continues as advertising manager.



L. H. Jackson

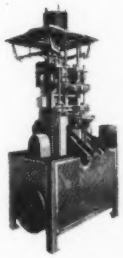


Louis Traung

Stecher-Traung Lithograph Corp., board of directors, have announced the election of Leslie H. Jackson to the presidency of the company to succeed Louis Traung who became Chairman of the Board. Mr. Jackson served for several years as a director of the Lithographers National Assn. and now is a director of the Lithographers Technical Foundation, as well as a member of the Printers & Publishers Advisory Committee of WPB. Mr. Traung asked for release from the heavy duties as president in order that he might devote more time to the development of lithographic processes and post-war planning. Both he and his late twin brother, Charles, have long been identified with outstanding technical advances in the industry.



S & S Machines solve Wartime Packaging Problems for packers of Munitions — Drugs — Foods — Chemicals!



Need help in solving a wartime packaging problem? Packers of dried eggs did and S & S engineers combined three S & S Universal Fillers with a Neverstop Automatic Carton Feeding Machine to produce finished lend-lease packages at the rate of 60 per minute! ★ Chemical Warfare and Ordnance Departments flashed a request for rapid conversion of existing equipment to bomb loading. S & S made changes in S & S Fillers that solved that problem. ★ The Quartermasters and their suppliers needed equipment for tricky packaging jobs for foods in emergency field rations kits. The S & S Transwrap Machine forms, fills and seals these packages at speeds of from 50 to 100 per minute. ★ Packers in the fledgling dehydrated foods industry brought a variety of especially tough problems . . . and S & S helped many find, first, the right package, and then the machine for its rapid production. ★ Chemical, drug and food plants pondered conversion away from use of critical materials. S & S Tight-Wrappers and other machines met these packaging needs. ★ *These success stories can be duplicated; S & S engineers can do the job for you! Powder, granular substance or paste . . . there's an S & S machine to fill it and to package it, speedily, economically, in packages that really protect. Ask—*

STOKES & SMITH Co

Frankford, Philadelphia, U. S. A.

FILLING • PACKAGING • WRAPPING MACHINES

For Your Information

The annual John Wesley Hyatt Award for outstanding achievement in the plastics industry was conferred for the year 1942 on Frank H. Shaw, president of Shaw Insulator Co., Irvington, N. J. Mr. Shaw received the award for having developed and perfected the transfer molding of thermosetting plastics, without which the production of many intricate and delicate plastic parts for war and industrial equipment would be impossible. Transfer molding, one of the industry's most important developments, is a method for molding thermosetting plastics, whereby the material is subjected to heat and pressure and then forced into a closed mold cavity.

Mr. Shaw was previously cited by the Ordnance Department for saving aluminum through the use of plastic detonating fuses for 60 mm. and 81 mm. mortar shells. A million of these transfer molded plastic fuses saves enough aluminum, ordnance experts have estimated, to build 270 fighter planes. The Hyatt award, established by Hercules Powder Co., Wilmington, Del., in 1941, is named for John Wesley Hyatt, who is credited with having been the inventor of the first plastic. In 1867, Hyatt developed a mixture of nitrocellulose and camphor, which for years was the only plastic.

In order to balance the supply and demand for new glass containers, to assure an adequate supply of containers for food and drugs during the peak packing season this summer, a temporary plan has been recommended by the Glass Container Manufacturers Industry Advisory Committee in a meeting with WPB. The committee recommended strict temporary control over the delivery, acceptances and the use of new glass containers by a number of industries. Such regulation is necessary, the committee stated, because the demand for glass containers is exceeding by 20 per cent the capacity of the industry to produce them. It was proposed that a quota, based on a percentage of use during some past base period, would be placed on the amount of new glass containers certain users could accept or use during the summer months. No restrictions would be placed on the delivery, acceptance or use of containers for foods, medicine or home canning. Control would be imposed on beverage containers (including carbonated beverages, malt beverages, wines and liquors), toiletry and cosmetic containers, and chemical, household and industrial supply containers.

Entries for the 7th Annual Food Packaging Show are now being accepted by The Spice Mill magazine, New York, sponsors of the show. Containers of coffee, tea, spices, flavors and related products are eligible and no entry fee is required. The closing date for the 1943 competition is August 15.

Another series of ideas is illustrated in a new Sherman Paper Products Corp. display guide, which has just been issued. The double-feature guide recognizes the need for simpler displays that are easier to install and the majority of ideas present ingenious suggestions that can provide quickly attractive, new effects in window and interior displays. Copies of the guide are available upon request to the company at Newton Upper Falls, Mass.

The special committee on Proprietary Toilet Goods, of The Toilet Goods Assn., Inc., through a sub-committee on Oral Hygiene has done a considerable amount of work on the dentifrice situation. This work has been summarized in a booklet called, "Oral Hygiene Habits of the American People." Among the facts disclosed are that in 1936 there were used 208,000,000 packages of prepared dentifrice and in 1942 there were 233,000,000 packages. Almost 7 packages per year were used for every family in the United States. The per cent of people using each type of dentifrice were: Pastes, 50.5 per cent; powders, 35.0 per cent; liquids, 5.1 per cent.

General Printing Ink Corp., New York City, has recently released a booklet, "Notes on the Science of Color," which is available upon request to the company at 100 Sixth Ave., N. Y. C. The booklet covers briefly the ancient theories on color, Sir Isaac Newton's observations and experiments, as well as the importance of the electromagnetic spectrum.

To help wood craftsmen obtain uniformly satisfactory results in the use of resin glues for bonding, Plaskon Division, Libbey-Owens-Ford Glass Co., 2112–24 Sylvan Ave., Toledo, has just published three informative folders. One gives complete instructions for the proper use of Plaskon cold-setting resin glue. This type is for assembly gluing and lumber laminating and fully meets the requirements of Air Corps Spec. 14110, Navy Aeronautical Spec. G-29, Army-Navy Aeronautical Spec. AN-G-8 and U. S. Navy Bureau of Ships Spec. 52G11. The second folder covers application of Plaskon resin glue, hot setting adhesive. This type is specifically intended for use with the "bag" molding processes for making formed plywood and low-pressure laminates. The third of the Plaskon instruction manuals charts the rate of cure of unextended glues of the cold-setting type. Copies of the folders may be obtained by writing the company at the above address.

The National Assn. of Manufacturers announced recently that as a result of an absenteeism survey in 25 of its member company war plants, it had been established that the wartime average of absenteeism in those companies had increased 56 per cent since the war effort started. The present or wartime percentage of absenteeism was found to be 5.42 per cent of workers as compared to 3.48 per cent before the war, the survey showed. The association, which conducted the survey through its industrial relations department, listed as chief causes of absenteeism, sickness, accidents, housing and transportation problems, high earnings, inexperience in regular employment and irresponsibility.

American Pulp and Paper Mill Superintendents Assn. held its 24th annual meeting in New York City, June 15, 16 and 17 Features of this wartime service meeting was the discussion of problems now confronting every pulp and paper mill in the country—pulpwood and the labor shortage. E. W. Tinker, executive secretary of the association, declared that an additional 20,000 men for the cutting of wood pulp was necessary to prevent an acute shortage of paper. He stated that pulpwood stocks were declining at a rate of about 130,000 cords a month and that mills were drawing heavily on inventories. He suggested, however, that the situation could easily be remedied if coordinated action could be had on the part of the several responsible agencies in Washington in declaring pulpwood cutting essential and in using labor sources such as prisoners of war, internees, etc.

"Synthetic Adhesives" by Paul I. Smith. Chemical Publishing Co., Inc., Brooklyn, N. Y. 125 pp. $3.00. Synthetic adhesives are in great demand for use in making aircraft, ships, shoes, clothing, packages and many other items. The value of these new adhesives as well as their chemistry is discussed in this book, which is written simply so that it can be understood by practical men and users of industrial adhesives. The author endeavors to present the material in such a way that the user of adhesives may determine quickly what type of adhesive is best for his purpose and how it can be used properly.

Dow Announces a Revolutionary Advance in Packaging Materials . . .



SARAN FILM

Keeps Moisture in its place!

Guns are now being shipped to our far-flung battle fronts adequately protected from an ever-present enemy—moisture. They are encased in *Saran Film*, a new and revolutionary transparent packaging material developed by Dow—the packaging engineered by the Frigidaire Division of General Motors, makers of the guns.

Saran Film provides three times greater moisture resistance than any other comparable material. While it is not at present generally available even under high priorities, the next step will see its use in packaging metal parts for aircraft and all types of ordnance.

Saran Film's high resistance to chemicals is important in packaging food and chemical products. Extreme flexibility at low temperature increases its serviceability. As for moisture, it keeps it in its place—in or out, as the case may be.

Distinguished by these remarkable advantages, an infinite variety of uses—the packaging of fruits, vegetables and other products—await *Saran Film* when Victory is won.

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN

New York • St. Louis • Chicago • Houston • San Francisco • Los Angeles • Seattle

Saran film

ETHOCEL • STYRON

DOW

CHEMICALS FOR INDUSTRY AND AGRICULTURE

Outlook for containers

(*Continued from page 55*) make it so it will hold extremely firm. Some of that type, for instance, have actually been used, I understand, for vacuum packing. That seems rather hard for me to believe, but all of these things I think are more or less in the development stage at the present time, and we are all groping for the answer.

There have been a good many closures designed for which some priorities in Washington have been granted which have not yet appeared on the market because of the extreme difficulty of getting the machines even after they had the priority. So while there are a number of those closures, each one with its own limitation, I don't think there are any of them as yet that are being produced in very large quantities, which is the unfortunate part of it.

Question: Is there any chance that supplies of either phenol resins or urea resins can be materially increased? Enough to take care of this industry?

MR. CONNER: Positively not, during this emergency. Very few of us realize the demands on those basic materials for Lend-Lease and the war requirements. It is very little appreciated by people in industry that our basic materials are the very basis of the explosives and the repellent materials that are absolutely necessary for our war effort. The production of formaldehyde and phenol has increased 300 per cent since 1938. In order to take care of our civilian requirements, as well as Lend-Lease and our own direct war efforts, it would require at least a 100 per cent increase over today's production.

Question: What is the possibility of colors, or for decoration of ceramic closures? Those we have seen have been in rather dull ranges of colors. Can this be improved?

MR. VANDERLAAN: In ceramic closures the average plant has about 60 or 70 standard colors. They, of course, have not been connected with an industry such as yours. They have been making pottery, tiles, dish ware and things of that sort.

Then, on the other hand, ceramic closures are made by a two-fire process; the body is burned first, and then the glaze is applied and it is burned a second time. Now it is highly possible that in this industry we could take unglazed ceramic closures and bake on enamel for you in most any color that you would want.

Question: A number of new closures are being developed which would require different finishes on opal jars. Is it possible to furnish these jars in almost any finish, or are the types of finishes limited?

MR. BRADY: There isn't any Government restriction upon making any finish; but the complication there is the materials, steels for the rings, and skilled workmanship. So that, unless some very excellent new closure is developed, I think it would be better for the industry to continue to use the same finishes as now exist.

Question: We understand that bronze powder and other materials to make metallic inks are not available. Can similar effects be produced without the use of these metal powders?

MR. KRAUSE: The answer is No. We are still having releases from time to time from the Government of bronze powder in small quantities, sufficient to take care of our wants.

Question: We recently saw a British tube which apparently was made of fibre impregnated with some waterproofing substance. Have tubes of this kind, or other non-critical tubes, been developed in this country?

MR. REMINGTON: I hate to give applause to the competition of the collapsible metal tube industry, but there have been tubes developed, of plastic material. The answer as to whether they are satisfactory or not I would refer you to the customers of those particular tubes. We particularly think there is no suitable substitute for a metal collapsible tube, and, except for the degree of essentiality, there is no shortage of collapsible metal tubes. The industry is working at 136 to 140 per cent of last year, and some companies are producing as high as 200 per cent of last year, restricted only by the available supply of manpower. We are not so blind as to think that there never will be developed a suitable substitute for metal, and every one of the 15 collapsible tube manufacturing companies has done considerable research and made considerable study of the problem.

To date none of those metal tube manufacturing companies is in production on a tube other than metal, but there are such tubes on the market.

MR. MAYHAM: I didn't want to put you on the spot in that question; but you are the only tube man in the crowd. I knew part of the answer; but I think what our correspondent had in mind when he wrote this was to try to get something so he didn't have to turn in the old tube for the new one.

MR. REMINGTON: The present material of the collapsible tube industry with suitable liners is lead, and that does not require an exchange tube, for certain lines. It is possible that the entire provisions of M-115 may be removed if all users of collapsible metal tubes turn over to lead, with the suitable liner.

Question: Have suitable paper compacts, vanities, and creme rouge containers been made? What are their limitations?

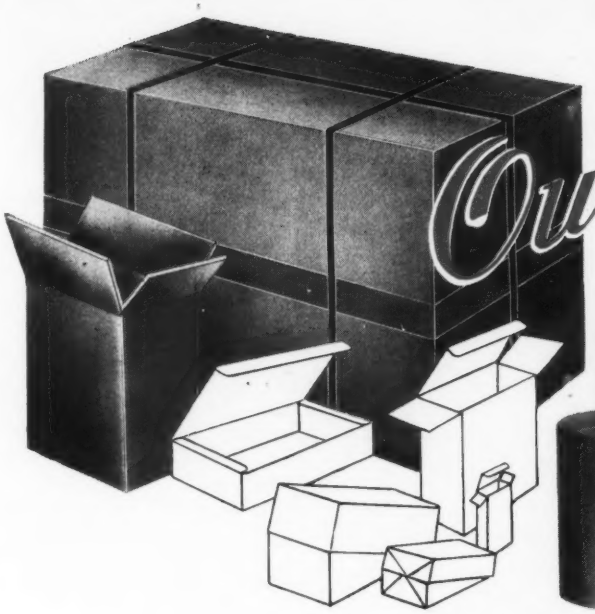
MR. VOSS: Well, I think that question ties up with the last one that you asked me. There again you have the question of equipment. There is another element, however, that has to be considered, and that is the fact that these rouge containers are of necessity small and they usually have to be hinged in some manner. From a closure standpoint they are very difficult to make or to shape.

I would say that there has been less success so far in substitute containers—that is, paper containers or cardboard containers—for compacts and lipsticks than in the case of the containers for tooth powder and things of that kind, but I do think there have been too many concerns going into these other things.

Question: Thermosetting plastics are said to have been developed from non-critical materials (sugar cane). Can these be used in available molding equipment, or as extenders for urea resins? If not, why not?

MR. CONNER: An extender of the existing resins, which is the basis of a molding compound, whether it is urea or phenol, which are the thermosetting compounds, is nothing more nor less than dilution. Now, you can go just so far in diluting everything before it loses the very characteristics for which it was originally intended. They are using sugar cane, coconut shells, wood flour, shirts, over-alls, and what-have-you, to extend our compounds. You can read all about them in all the leading magazines of the country. Most of the articles on our resins, on these materials, are either written by doctors or lawyers or someone who is trying to secure a position in the industry and has not yet succeeded.

We did, for a long time before this war, try to extend the materials; that is natural. We learned something about extension during Prohibition days! It is the same thing exactly. There is nothing new about extenders. A good many of you gentlemen in the audience are buying closures and packages made from extended materials. If you would accept them and



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- FOLDING CARTONS
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In the seventy-five years since Apaco was founded we have seen America face wars, panics, depression and disaster . . . and from each crisis emerge stronger than before!

Today, our country is engaged in a desperate struggle to determine whether the freedom we have created and cherished shall survive or perish.

The Diamond Anniversary which the Atlanta Paper Company celebrates this year is of small importance compared to the all-embracing immensity of that issue. Yet . . . it is only proper that we should voice our faith in the future.

APACO was founded and built on Faith . . . Faith in the continued growing greatness of our country. And, we confidently believe that America will emerge again, steeled by adversity and strife, to enter a new era of glorious achievement!

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ATLANTA, GEORGIA

stop complaining about them, we would extend the materials still further. There is too much talk by too many people who don't know anything about the subject, bringing home to you folks an idea that by extending there will be lots of materials available. There just is nothing to it.

Question: What can you tell us about paper lipstick containers? Do they stand up under use, and are they in any way affected by the stick proper?

MR. PATTERSON: I think by and large it can be said that the lipstick containers that are being made today stand up fairly well under use. Of course they are not metal. They are paper. Paper wears out more quickly than metal. It won't stand the scuffing in a pocketbook that the metal one will stand, and so forth.

When we first started trying to make lipsticks we had considerable trouble; now most of it has been overcome. I would say today that there are paper lipstick containers that do a reasonably good job for the thing they are gotten out to do. There again the trouble is that there aren't enough of them.

I think you are going to find that your real shortage of lipsticks will probably be much more acute in the lower bracket price range. I think that there are going to be enough lipsticks—or, not enough, perhaps, but a fairly good quantity, in those that are more expensive. But I was listening at the OPA conference in Washington the other day, when they had this subject of low-priced cosmetics under discussion, and it just seemed as though there wasn't any large production of low-priced lipstick containers at the present time.

Question: Are ceramic closures impervious to moisture? If not, to what extent will they absorb moisture?

MR. VANDERLAAN: The average ceramic body has a moisture absorption of one-half of 1 per cent by weight. From the outside, they are absolutely impervious, because of the glazed covering.

Question: In view of the tremendous emphasis on the use of glass in home canning, and also in commercial food industries, what is the outlook for adequate supplies of glassware for cosmetics and proprietary medicines in the next few months?

MR. BRADY: In spite of the very tremendous demand for home canning containers and closures, I believe that the glass industry, if not restricted on fuel, has enough packing material to pack the product and ship it in the same quantity as in 1942.

Question: We understand that the best rating which is being given thermoplastics for closures is probably AA-4. Will material be available on AA-4 rating, or does it need a higher rating to secure the material?

MR. CONNER: An AA-4 is simply leading you on. It is just a promise, and we cannot fulfill any such promise as that, no matter who gave it to us. Our general pattern in the plastics industry for closures and packages is 90 per cent AA-3, so when you are handed an AA-4 that is simply a return ticket back home, to keep quiet about it.

If you please, I would like to get off that particular question, and just say a few things to you about what you can expect and what you cannot expect about plastic closures and packages.

Just yesterday I was in a conference with some representatives from Washington. One gentleman who was talking authoritatively on the plastics situation had been in the shoe business before he went to Washington. The other gentleman who was talking authoritatively had been in the shirt business. Well, between the shirts and the shoes I can understand how they would know a lot about plastics, because those two gentlemen are exponents of the extender program. They know something about plastics, because it is a fact that the very basic materials to use in these closures or the resins that you make the closures from are used extensively for the tanning of leather. It is also used for the waterproofing of cloth, and used extensively for zipper work and buttons and also for bleaching and when the fellow who makes those shirts dies, he gets seven quarts of embalming fluid, because that is one thing that the embalmer must use. Seven quarts of that are shoved into his body. You take it alive, as long as you live, and then you get it again when you die.

These basic materials have over 700 different applications. The fact of the matter is that you couldn't eat anything from a can, such as cheese, or beets, unless you had some basic materials, of the very plastics you are looking for, in there to preserve them. That is absolutely true. Then again, you folks who dye your hair—you couldn't dye your hair without some of that basic material, nor could you have permanent waves without that. You could go on, and I could tell you for hours just what they do with these basic materials. But essentially there is just sufficient to go around for war and Lend-Lease and then what some people now have called the prime essentials for consumer products, civilian uses.

Just yesterday this gentleman said to me, "You can't make any more of those fancy buttons for ladies' coats and suits for the fall."

I asked him why, and he said: "You can only make a utility button."

"But," I said, "this button, although it looks pretty, enables the lady to button her coat, and so it is a utility button."

He said, "I don't mean that."

"Well," I said, "what is a utility button?"

He said, "It is one that performs a function."

Well, it is a fact that I spent quite a little time with these gentlemen; but the situation is getting so serious—and it is getting more serious all the time.

We are told now that only buttons can be made for men's and women's wear out of synthetics that are strictly utilitarian and that the button must be made with as little material as the industry's history has proved is sufficient to make the button that will button your coats and hold them together.

All fancy stuff is out; and yet, on the other hand, I can't secure steel to change the molds over to plain buttons. That is a job for the ladies to do. Go down to Washington.

I have a brother-in-law in this audience who is ready to shoot me. He has been waiting for caps for nail polish for 3 months. He wants 20 million caps to take 31,000 pounds of material, and I am told that they can't have one single cap for nail polish during the month of May. Positively, I can't get a single pound of material. There is a list of those things that you can't have material for.

But that is the situation; so that I say to you that you want to bear with your supplier and you want to do everything possible to resort to the use of closures other than those that are made from plastics, whether they are the thermosetting or thermoplastic, whether they are acetate—no matter what they are; you go right back into your chemical books and you will find that you will lead right into the very basis of what is necessary to carry this war on.

Question: Has there been any deterioration in the quality of waterproof and alcoholproof labels?

MR. KRAUSE: So far we have used a resistant which is not alcoholproof in the sense that it does not resist long, but only for the time being. Nothing has been found that is alcoholproof except if it is sprayed with lacquer.

Question: Have materials been developed for coating the interior of lead tubes that will satisfactorily protect the ma-



What goes on here ?

Why, Minnesota Tested House Paint—manufactured by the Minnesota Linseed Oil Paint Company, Minneapolis, Minnesota. Since 1870, the beautifying and protective qualities of Minnesota paint products have brought enduring beauty both *into* and *on to* the homes of America.

Formerly packed in metal containers, Minnesota paint products are now distributed in sturdy glass jars, tightly sealed with dependable Crown Screw Caps.

Perhaps you, too, are turning to glass containers in order to conserve more critical materials. If so, you will be glad to learn we can supply you with Crown Closures in a wide variety of types and sizes to meet your particular wartime needs.

CROWN CORK AND SEAL COMPANY

World's Largest Makers of Closures for Glass Containers

BALTIMORE, MARYLAND

CROWN CLOSURES

ROWN'S WARTIME POLICY: *To supply closures, containers and services for packaging foods, beverages, chemicals, etc., eded by civilians and the armed forces. To build an ever-increasing volume of vitally needed weapons of war for our fighting men.*

terial packaged therein? How effective are these coatings under conditions of consumer use?

MR. REMINGTON: I want to say that the collapsible tube industry is using lead. There is no secret about that, because everyone who buys collapsible tubes knows that that is so. The only tin tubes available are for a very few pharmaceuticals, and those tubes are only obtainable on high priorities, from any manufacturer. Tin-coated lead tubes are available, to a limited extent, for certain other pharmaceuticals, all of which are classified in Order M-115. The rest of the tube products, which include practically all of the toothpastes and shaving creams, are either now using lead with suitable liners or will be within the next two or three months.

The toothpaste people have what I should term a temporary order permitting the use of 3 per cent tin-coated.

Now, bringing up the subject of liners simply means that the responsibility for the liner is upon our customers. We have developed, as an industry, about 12 or 15 suitable, useful wax compounds. In addition to that, we have developed several extremely efficient lacquers and combinations of lacquers. Some of the lacquers have been adopted by the Army Medical Corps as being a suitable liner for some pharmaceutical ointments. The individual tests of products manufacturers indicate that these lacquers or waxes seem to be suitable for most of their products, but not all. There is no such thing as an all-purpose liner, so far as we have been able yet to discover, and there is no such thing as just one wax doing the job for every product—or one lacquer. If you had the research facilities to prove to your own satisfaction that the liners that we put in lead tubes are satisfactory to you, then that is the very best that we can possibly do.

You must remember that ever since collapsible tubes have been presented to the public, we, the tube manufacturers, have never known what goes into your products; and, furthermore, we don't know that even today. Therefore, we cannot accept any responsibility. The only thing we can do is to submit samples for your tests, and if those tests work out all right, and you think the material submitted is suitable for public use—and if you can then get the tubes from the tube manufacturer—I should say that you might as well go ahead.

I don't have to lay too much emphasis on the fact that there is a growing demand by the armed forces for collapsible tube products. I do believe that almost all our civilian business has been properly taken care of. When I say "properly taken care of," I mean that it has been taken care of on what the Government has chosen to set as a standard, namely, the 1940 output. Most users have gotten more than the 1940 output; they have gotten at least 1941, and are now even getting the rate of their 1942.

So, if your customers will set their sights and sales for new products at a reasonable figure, we believe that you will get all the tubes you will require. But if by reason of this mere ground of substitution you turn to collapsible tubes, where you formerly used some other container, then I can tell you that you are out on a limb, and not we, because we are making too many for the armed forces, and too many for our regular customers, to take care of any new business.

Question: We have heard of glass closures for use on glass jars. Have any been developed and are they practical?

MR. BRADY: Our company has spent a lot of time and effort trying to develop a glass closure, and a good many samples have been made, a good many changes have been made. So far, I believe we have come to the conclusion that it is not practical for any cosmetics or fluids, because of the danger of chipping.

MR. MAYHAM: Gentlemen, it is getting pretty close to lunch time, and if there are no questions from the audience I think we ought to all rise and give these gentlemen a hand. They have done a splendid job for us this morning.

Precision packs

(Continued from page 39) an expensive microscope for the case, but he certainly would not buy one without a case. He expects the case to be strong, durable and styled to the scientific dignity of the product. On the other hand, this company makes in normal times a large quantity of amateur microscopes and chemical laboratory sets. In these lines, the case is part of the sales appeal and must be designed to sell in competition with similar products of other makers.

The company has its own shop where many of these cases are made, since most of them must be built specially for the equipment they are to house. It buys large quantities of fine woods, leather, leatherettes, velvets and other fabrics as well as hardware for hinges and locks. Such materials are also used in the making of millions of spectacle and goggle cases. The company has a printing shop where it prints some of its box labels. Boxes, folding cartons and many kinds of containers are purchased through outside suppliers.

Bausch and Lomb was among the first 14 plants in the country to receive the Navy E, followed six months later by the Navy E Burgee with star. It has since received the Army-Navy E with a total of three stars for continued high production. In addition it flies its own service flag for more than 1,800 men in the service and the Treasury flag for war bond purchases. These are symbols of achievement in another industry where packaging progress plays an important part in delivering the goods.

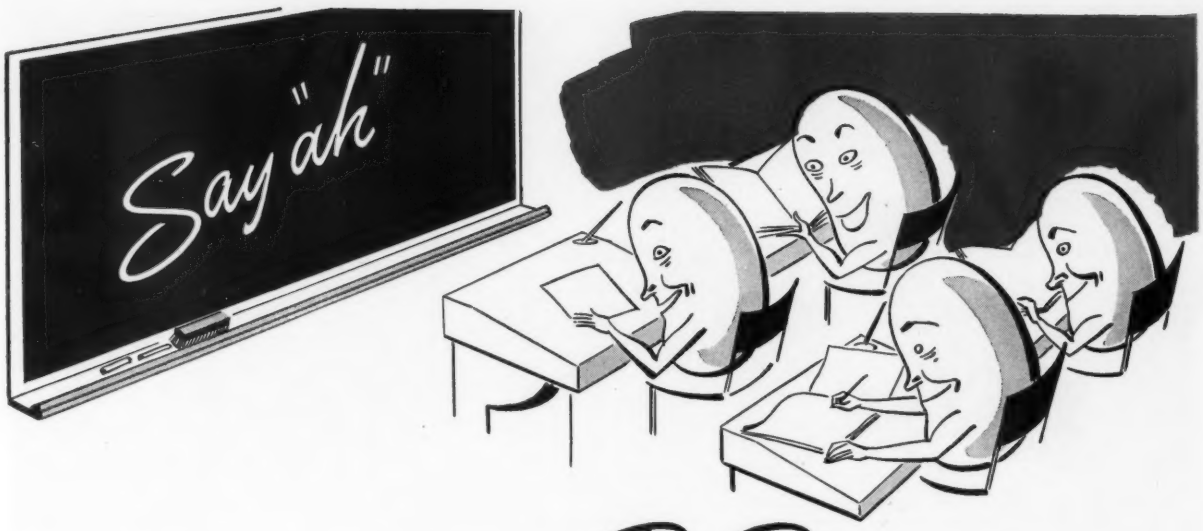
Fish packers

(Continued from page 46) half-dozen hard-working blind men employed at the Fish Pier plant: "I really appreciate this job. We are getting along all right here. We are doing the work and we hope that if you write about us, it will help other fellows get jobs, too."

Lester Stott is a graduate of Boston University. In the WPA project, he taught Braille to newly blind pupils. He also taught Braille to people who could see so that they might copy books from clear print into Braille, enabling other blind to read.

The rest of these sightless boys carefully but confidently finding their ways to and from their new-found work in Boston's bustling wharf district echoed Lester Stott's hope that their example of honest, determined industry would serve to open the eyes of employers everywhere to the fact that the "blind" can see when it comes to a chance of doing their share.

Credits: Boxes, National Folding Box Co. Stitching machines and staples, Acme Steel Co.



HOW WE PACK THE *B-B's* THAT MADE *Boston* FAMOUS

BAKED BEANS!—with the authentic Harvard accent, now come packed in air and moistureproof cylinders.

No can! No glass! No crockery!

The container is a paper product lined with a moistureproof cellophane bag that seals the natural moisture, goodness and flavor in—and seals the air out.

Dobeckmun engineers developed the CELLOCUFF* principle of this lightweight yet fully protective package, which provides a heat-sealed transparent top through which the delectable, appetite-stirring B-B's can signal a "come hither" to the shopping eye.

Wartime restrictions have made drastic changes in packaging; and military needs posed some very unusual packaging problems. The Dobeckmun staff has done pioneering work both for civilian goods and war products and materials.

And in tackling and solving new problems they have learned many things which will be valuable to postwar business.

Right now, of course, our facilities are at the first call of war needs. But it is not too early to be thinking about your postwar packaging—not too early to open a discussion with Dobeckmun's specialists. If you're interested, we'll be glad to hear from you.

HERE'S HOW IT'S DONE:
The beans are precooked, then poured into the cellophane lined cylinder. A transparent cellophane disc is then heat-sealed over the liner. After the package is capped the beans are kept refrigerated until sold.



*CELLOCUFF is a trade-mark of The Dobeckmun Company.

THE DOBECKMUN COMPANY
CLEVELAND, OHIO · OAKLAND, CAL.



Goodyear's new research laboratory

Among the most advanced facilities for package research at The Goodyear Tire & Rubber Co.'s new $1,325,000 laboratory, dedicated the week of June 21, will be complete pilot plants for the making of Pliofilm, Pliolite, a coating material, and Plioflex, a synthetic resin material which may be a possible rubber substitute for jar rings.

This equipment makes possible for the first time complete testing without interruption to the company's regular production equipment, which formerly had to be used for testing purposes. It means that any prospective user of Pliofilm, or other material made by Goodyear may take his problems directly to the laboratory for solution at any time without distuption to normal production.

These pilot plants are only a small part of the equipment of this new laboratory which contains the latest and most powerful instruments for research in rubber, synthetic rubber, plastics, aircraft and allied fields. Opening of the laboratory is recognition by forward-looking management of the increasingly important part science is playing in industry.

For the present, the laboratory, like every other facility of Goodyear, will be devoted to the task of winning World War II, the company stated. Once the war has been won, the laboratory will enable Goodyear to continue its far-sighted program of industrial research.

The laboratory is the culmination of years of planning for adequate research facilities which began with a design room set up by P. W. Litchfield, now chairman of the board, as one of his first acts when he joined the company as production manager in 1900.

The present research personnel of the Goodyear Research Division consists of approximately 125 chemists, physicists, engineers and metallurgists along with some 400 others who spend full time on field work. The new laboratory when all its equipment is installed will accommodate double that number.

The structure is in the form of a "U" and comprises a total of 74,000 sq. ft. of floor space, distributed on three floors. The farther end of the longer arm of the "U" constitutes a single room three stories high, which will be used for large-scale equipment or pilot plants.

On the ground floor are five large laboratories suitable for heavy machinery. These, for the present, will be used for studies of rubber processing, plastics processing, film casting and allied tests. Managerial offices are on the second floor, as are laboratories for physics, X-ray and microscopic research.

The equipment of the various laboratories includes many of the latest research instruments, such as an RCA electron microscope which will magnify 100,000 times and a Bausch and Lomb analytical spectrograph. The laboratory is constructing its own infra-red spectrometer.

The laboratory offers unlimited opportunities for further development of materials used in packaging. Wide applications and improvements in the use of Pliofilm will be studied. Further investigations will be conducted in the uses of Pliolite as a moistureproof coating for paper and as a laminating agent and coating for foils, cellulosic materials and textiles. Possibilities of using Plioflex, a material which is a copolymer of polyvinyl chloride and vinylidene chloride, will be explored further. This laboratory enables Goodyear for the first time to study all packaging materials and problems in anticipation of making many new products after the war.

Heat sealing

(*Continued from page 77*) control can determine by test approximately how many seconds the light should be on and off and advise the machine operator to this effect. If the operator notices that the light is on or off for too long a period of time, the person who makes the adjustments can be notified. A sudden change in temperature may be due to a foreign substance on the sealing members, a variation in the electric current supply due to additional loads being thrown on, a window or door nearby being opened or closed, the room temperature being raised or lowered, the turning on or off of fans or blowers and many other causes. Despite the excellence of the heat controls in any machine, it is recommended that a check be made on the quality of the heat seals at least every 15 minutes.

All sealing jaws or rollers must be kept clean, so that they permit the free passage of heat and allow intimate contacts with the bag being sealed.

Provisions for making pressure adjustments are provided in each sealing machine. As the machine parts wear, the pressure will grow less and this should be observed closely and checked at least once a week. The pressure on rotary sealers can be increased by inserting stronger springs and in jaw type sealers, the pressure may be increased by shimming one of the sealing jaws. When the time factor has been adjusted to its minimum, it is sometimes possible to increase production by having the operator seal two bags at once. Production can be increased by having the machine operator let go of the bag as soon as it is gripped by the sealing jaws. The operator can then use the dwell, or time that the heat or pressure is applied, to prepare the next bag for the sealing jaw. The machine should be positioned so that gravity will remove the sealed package from the machine without additional handling.

It should be noted that manually operated jaw type sealers are not recommended for any critical packages. On such machines, the time and pressure factors are dependent upon the human element.

Many people consider the indentations in a heat seal to be there for a decorative effect and many packers of heat-seal bags have selected crimpings or configurations for appearance rather than utility. On a heat-seal package, these identations are widely termed "crimps," with the result that many bag-sealing machines are called "crimpers."

The question of whether or not to crimp, the directions in which the crimp should run, the angle and pitch of the crimping teeth are all determined by the type of material being heat sealed and the end result the crimping is supposed to accomplish.

As a general rule, flat jaws or rollers (that is, without crimping teeth) should be used on paper or cloth on which a heat-sealing coating has been applied. The paper or cloth generally resists the crimping action and has a tendency to flatten out when the heat and pressure are removed. If for any reason paper material has to be crimped, care should be taken to see that the crimps are parallel to the grain of the paper.

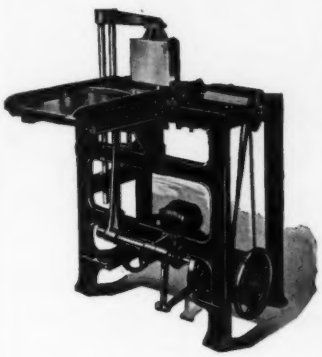
Cellulose materials are capable of being stretched under heat and pressure and a crimp seal on such material is stronger than a flat seal. These materials will stand a fairly severe angle in the crimping teeth, 90 deg. included angle being widely used.

Mounted heat-sealing foil can be crimped, provided the pitch of the teeth is not too coarse and the included angle of the teeth is not less than 130 deg. (*Continued on page 104*)

Make plans Now — for the future

Those companies who have these machines should take care of them as they have never done before. A little time spent in examining this equipment, oiling and greasing them regularly will save breakdowns, time and pay dividends.

To those companies who could use these machines and can obtain a high priority we say "Investigate and see how your carton packaging production can be stepped up and your costs lowered." Send us a sample of each size carton you desire to handle and we will recommend equipment to meet your specific requirements.



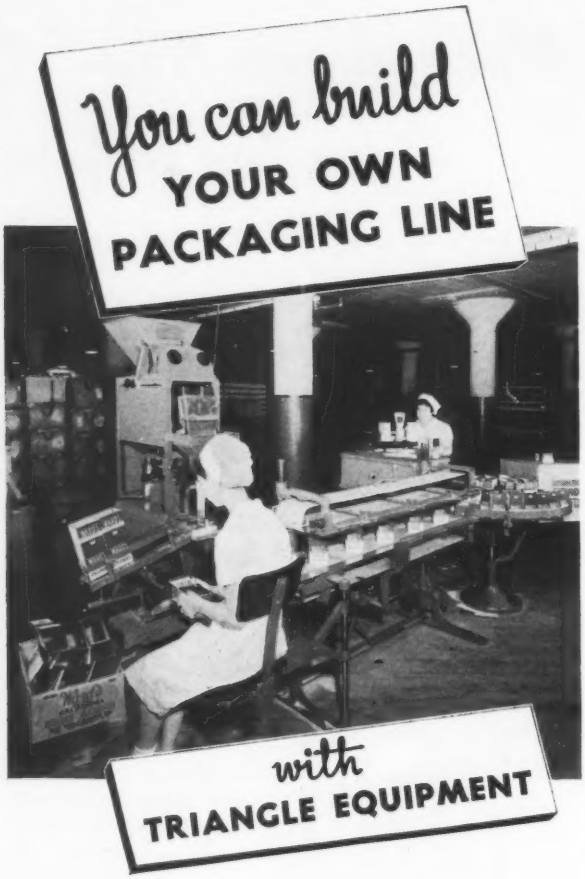
This PETERS JUNIOR CARTON FORMING AND LINING MACHINE sets up 30–40 "Peters Style" cartons per minute, requiring one operator. After the cartons are set up, they drop onto the conveyor belt where they are carried to be filled. Can be made adjustable to set up several carton sizes.



This PETERS JUNIOR CARTON FOLDING AND CLOSING MACHINE closes 30–40 "Peters Style" cartons per minute, requiring no operator. After the cartons are filled, they enter this machine on conveyor belt as open, filled cartons and leave machine completely closed, ready to be packed for shipment or wrapped. Can also be made adjustable.

With all of its facilities devoted to the manufacture of war equipment, Peters is contributing directly to the war effort.

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ARMY E NAVY

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Laminated materials, other than cellulose sheets, should not be crimped, as their thickness is such that the crimping action does not reach the surfaces which are to be heat sealed.

Crimping teeth are commonly cut in three directions. The first is called a vertical crimp and the crimps are parallel to the sides of the bag. The horizontal crimp runs across the top of the bag. The diagonal crimp is described by its name. The strongest seal is made by a vertical crimp, but this type of seal is not liquid-tight. The horizontal or diagonal crimp should be used where liquid tightness is a requirement.

Ordinarily the width of a seal should not be greater than 1 in. One-half in. to $^3/_4$ in. is generally wide enough. It should be remembered that in a given sealing machine, as the area of the seal is increased, the pressure per sq. in. is lessened.

Bags are no stronger than the material of which they are made. Each material has a certain useful life and care should be taken to see that bags which have lived half their lives in a warehouse or storeroom are not used in critical packages. It should be realized that the cost of a bag is a small factor in the cost of the completed, delivered package. There are some converters who make their bags to a high standard and they should be encouraged. Bags should be used in the order they are purchased, so that the first bags into a plant are the first bags out. Bags should be stored under proper temperature and humidity conditions as this will increase their useful life.

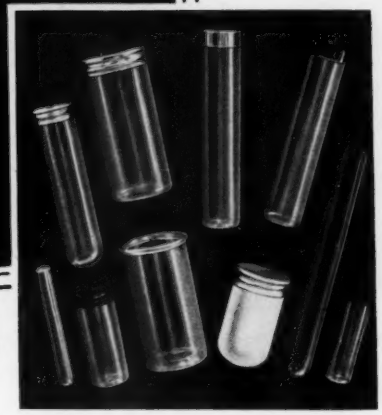
The usual way of getting an article or product into a bag is to open the bag and place or drop the article into it. This method has been used since bags were first made, but it is not recommended for large bags. A suggested method is to place the product to be bagged on a tray, the dimensions of which are somewhat less than the inside dimensions of the bag. This tray has to be supported above a table in such a way that the bag can be slipped over the tray upon which the object rests. One end of the tray serves as a "shoe horn" and permits the bag to be slid over the tray in such a way that the bag is not injured. The bag and contents are then slid off the tray. This method is necessary when the bag is to hold a number of objects and hold each object in fixed relation one to the other. This method is also desirable when the weight of the bag contents is such that they might injure the bag in the loading action.

Having loaded the bag properly, it should then be brought to the bag-sealing machine. Before being sealed, it is absolutely necessary that as much air as possible be excluded from the bag. Enough air must be excluded to permit the bag walls to be free from tension. Otherwise any slight drop or concussion will cause the entrapped air to break out through one of the heat seals of the bag. Means of excluding air are several. One is to pull a partial vacuum on the bag before sealing or to fill the bag with some gas which can escape through the bag walls after it is sealed, or pressure may be exerted against the front and back of the bag so that these surfaces are concave when the bag is sealed. If a liquid or semi-liquid is being sealed in the bag, it is often possible to raise the load line by exerting pressure on the exterior of the bag and in so doing exclude part of the air which would normally be between the load line and the bag seal. Too much emphasis cannot be placed on this air-exclusion operation.

The bag-and-carton package consists of a heat-seal bag in a carton. The bag offers protection to the product while the carton protects the bag and carries the load. To make sure there is no weight against the bag surfaces, the bag should be larger than the inside of the box. This insures that each part does only its own job. (*Continued on page 107*)

LIGHT-WEIGHT + PROTECTION
+ COLOR + EYE-APPEAL
+ SAVINGS =

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VIALS AND TUBES



This is the merchandising container to consider on your future packaging requirements. Standard diameters ¼" to 1¼" and lengths up to 6". Complete range of colors, clear or opaque. Cork, slip-on or screw-cap closures.

Write for complete details.

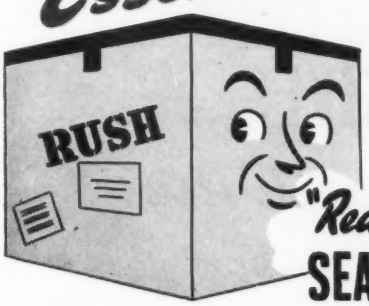
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"Red Streak" SEALING TAPE

Just good paper and plenty of glue make Red Streak Sealing Tapes a certain insurance against shipping losses. Have you tried it?

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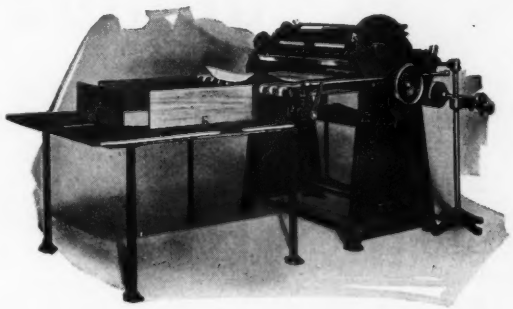


"Red SEALING *Streak"* TAPES

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Many Great Nations Are Already Planning Post War Programs

as are also many business men—**ARE YOU?**



The Beck Sheeter

After "Unconditional Surrender" is a fact of history, you will want the highest productive Sheeting equipment obtainable, to meet competition. Your choice may be from the hi-speed Electric Eye machines for "spot sheeting" down to the more simple standard machines for plain work.

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SQUARE, FLAT TOPPED PACKAGES



Your bag package will stack as easily as a carton if it is sealed with a SEALTITE Bag Sealer. SEALTITE uses any standard gusseted paper bag. Because of the method of settling and sealing it delivers an attractive, sift-proof package with a square, flat top.

And SEALTITE is FAST. It handles 2 to 10 lb. bag packages at speeds ranging from 15 to 50 bags per minute. The savings in manpower thru SEALTITE'S automatic operation plus the increase in production due to its greater efficiency is resulting in savings as high as $300.00 per month per machine.

Write for complete information

ARMY E NAVY

CONSOLIDATED PACKAGING MACHINERY CORP.
BUFFALO, N. Y.



bombs and printers' ink

Both of them are fighting the Axis and winning the war. When the fight is won the bombs will have served their purpose but printers' ink will loom large in the post-war era.

We are going to have new and better aniline and rotogravure presses for post-war industrial printing.

Just now we are building machines for propelling bullets into the heart of the Axis. Tomorrow we'll build printing presses for you and your customers' needs.

In the meantime, send us some idea of your post-war plans and requirements that you have in mind.

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WATERPROOF ADHESIVES

Trade Mark Registered
THISTLE BRAND

proved in use

THISTLE BRAND waterproof adhesives meet high standards of water and weatherproofness. They seal solid-fibre weatherproof cases and asphalt laminated kraft bags and wraps for Armed forces and Lend-Lease consumption.

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The bag-in-box package can be divided into two types. The first can be called a *combination package* because the bag is of such type and material that it must be assembled with the box before being loaded. This combined package must be handled manually in the filling, bag-sealing (see photograph) and carton-closing operations. This is awkward unless one end of the carton has been closed by gluing, an operation which can be done on a certain top or bottom sealing machine. The closing of the carton, after the bag has been heat sealed, cannot be done readily on a carton top or bottom sealing machine. An example of this type of package is found in some of the 30-lb. frozen egg packs.

The second type can be called the *double package*. It consists of a bag-in-a-box, but the bag itself is of such type and materials that it is strong enough to be handled as a single package. It can be opened, loaded and sealed by itself. It is then inserted into a carton, which carton can then be glued automatically on an adjustable carton sealing machine (see photograph). Many of the 5-oz. egg powder packages, millions of which have been shipped on lend-lease, are double packages.

A very interesting type of bag-sealing machine has recently been developed which operates on an entirely different principle than any now in use. The heat seal is made by means of high frequency electrostatic heating. An article about this new machine may be found elsewhere in this issue.

Saran film

(*Continued from page 73*) The cost of redesign was great in terms of research, packaging cost and labor, but is generally considered as negligible insurance that these guns will reach the active front in perfect condition for instant use. Saran film plays the essential role of moisture barrier in this package.

Saran film of the present grade of manufacture is an oriented, transparent sheeting. It is now being produced in two gages—.001 in. and .002 in. Like its parent polymer it does not absorb water nor is it affected by oils, greases, acids, gases, alkalies and most organic chemicals. It is especially tough and flexible and retains these properties at reduced temperatures.

Of all the organic films, Saran film ranks highest in its ability to resist moisture. Laboratory tests have indicated an average moisture vapor transmission rate of .20 gram per 100 sq. in. per 24 hours for a .001-in. thick material. The .002-in. film possesses an average transmission rate of .16 gram on the same basis.

Upon aging there is a decided improvement in the moisture vapor transmission, the amount of water vapor passing through the film decreasing from .20 to approximately .10 grams per 100 sq. in. per 24 hours. Outdoor exposure does not impair strength or flexibility.

Oriented Saran film stiffens slightly at reduced temperatures, but does not become brittle. Laboratory tests have indicated that it does not crack under folding at temperatures as low as −60 deg. F. This characteristic is extremely important in present-day packaging of military items.

Toughness is an outstanding property of Saran film. Results obtained on an MIT folding endurance tester have demonstrated its ability to withstand more than 250,000 flexings under a one-kilogram load at room temperature. In combination with superior tensile strength of this film, ability to resist flexing materially adds to its toughness.

The present production grade of this material is oriented



...Via Swift's Glue

Here they are. Sherwin-Williams' new "war emergency" containers—the side "walls" of which are made from paper instead of vital metal.

Three different types of Swift's Glue are used in making the tube, "paint-proofing" it, and also sealing the top and bottom to the body.

This case of Sherwin-Williams' cans is typical of scores of new containers now made of paper—and glued by Swift. Such containers are replacing drums, cans, and many other packages formerly made of materials no longer available.

May we help you with your new gluing job?

Write or wire us and we will have our representative in your vicinity call immediately.

Animal Glues · Vegetable Adhesives

SWIFT & COMPANY
Glue Division CHICAGO

FACTORIES—*Harrison, N. J. · St. Joseph, Mo. · Chicago, Ill. Omaha, Nebr. · South San Francisco, Cal.*

SPECIALISTS
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LET us quote you on your requirements. Hundreds of dies and molds available for Essential Oil Cans, Sprinkler Tops, Screw Caps, Aluminum Capped Corks, Lead and Tin Coated Spouts, Metal Specialties. 85 years' experience in meeting the needs of packagers. Call upon us for aid.

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during manufacture. It therefore tends to shrink at elevated temperatures unless restrained. The degree of shrinkage is a function of the temperature of exposure range from 0 per cent at approximately 90 deg. F. to 20 per cent at 212 deg. F. The restraining force necessary to counterbalance this shrinkage is of a low order so that packages which have been fabricated in accordance with good design principles may be exposed to the higher temperatures without danger of splitting. In some packaging problems, advantage may be taken of this property by fabricating a loosely fitting wrap and subsequently shrinking it over the article by exposure to heat.

Of the products now available which possess adequate resistance to moisture-vapor transmission to qualify for use under Method II requirements, Saran film is the sole material which is a single film; other sheetings are dependent on coatings or on being combined with other laminates to obtain the combination of properties required for this use. Because of this fact, the use of Saran film immediately eliminates any difficulties ordinarily encountered in moisture-free packaging with the use of laminates.

Several methods are available for the fabrication of packages from Saran film, the most widely used of these at the present time being the application of a hot air flow to the point of desired weld. This method takes advantage of the relatively sharp melting point of Saran as well as the tendency of the film to shrink. Seals obtained by this method possess an average strength of 80 per cent of the original strength of the film. Another process which is just beginning to receive recognition is employment of high frequency radiations.

While the wartime use of Saran film is now confined mainly to the protection of metal products, its peacetime potential covers a wide range. The packaging of fresh, frozen, processed and dehydrated foods; of clothing, tobacco, sports equipment, drugs and cosmetics; and the fabrication of seat covers, raincoats, splash guards and handbags are numbered among probable future uses. New types of this group of polymers are under development at the present time, and promise much for the postwar packaging of articles of commerce. Experience gained with Saran film today under the stringent requirements of wartime conditions definitely points to it as a major packaging material of the future.

Showcase garden

(Continued from page 53) Revlon packages in one suggestion. In another, a child's garden tools created the atmosphere for the package. These bulletins were distributed to all Revlon customers. As a fillip for the jaded interests of department store buyers, Revlon supplied each of its salesmen with a special kit for the new Victory Garden package. The kit is made exactly like a crate, is of wood, small enough to be conveniently carried under the arm, and is a replica of the new package. It is packed with shredded waxed paper in grass-green, just as the package is. When the salesman appears with this interesting kit and opens it to show the new package, the buyer's attention is immediately attracted.

Nothing has been changed about its bottles or closures for the nail preparations, the company points out. But a new and timely package has been made by combining three of the preparations in a cleverly designed box. The theme for box and promotion not only ties in with a current popular interest, but also helps the national campaign for victory gardens by making shoppers constantly aware of it as they walk through stores and look into windows where Revlon's vegetable crate, Victory Garden package is displayed.

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WAR TIME PACKAGES

For **WAR MATERIALS**

For **CONSUMER ITEMS**
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NEW CONDITIONS
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MID-STATES GUMMED PAPER COMPANY
is solving

If you have a problem along packing, shipping or production lines, which might be overcome by means of adhesives, coatings, saturating, laminating or combining paper, cloth, or other materials, just outline it to us.

Without obligation we will go to work on it and if there is a practical solution—we'll find it for you.

Your inquiry is invited.

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Manufacturers of Green Core Paper and Cloth Gummed Tapes. Mid-States *Really Flat* Gummed Papers. Green Core Stay Papers, and Green Core Gummed Holland and Gummed Cambrics.

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Seal your cartons with



JOHNSON'S Waterproofing Carton Wax!

If they're going across the Atlantic or Pacific... to our soldiers or our allies... you know this: extraordinary measures must be taken to seal your packages against moisture. Failure to do so may mean loss of vital war supplies.

To give your cartons that *extra* protection against moisture, use Johnson's Waterproofing Waxes. There are four of them... with physical characteristics to meet a wide variety of packaging requirements.

Specific uses? Many manufacturers use Johnson's Waterproofing Waxes to impregnate cartons carrying small arms ammunition—"Food Ration Kits"—propellers—surgical instruments—meat—dehydrated food—the list of uses is almost limitless.

Are you now shipping in paper cartons instead of metal? Then Johnson's Waterproofing Waxes may be just what you need for that "extra" protection. Fill out and send the memo below. Do it today.

★ *BUY U. S. WAR BONDS AND STAMPS* ★

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Racine, Wisconsin

Memo: to S. C. Johnson & Son, Inc.
Ind. Wax Div., Dept. MP-73, Racine, Wis.
Send information on Johnson's Waterproofing Waxes.
Name_____
Address_____

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WANTED—Sales Manager for old established Fancy Paper (box covering) firm. State experience, salary and personal details. Strict confidence. Reply Kupfer Bros. Co., 2 Astor Place, New York City.

FOOD MANUFACTURER has Stokes & Smith automatic packaging line now working only part time. This line will package any free flowing material in a paper carton measuring 3 1/2 inches by 2 3/4 inches by 1 1/4 inches. Can arrange to receive material in bulk packages and deliver in shipping cases ready to ship. If interested, describe product and quantity to be packed. Reply Box 179, Modern Packaging.

FOR SALE—One (1) automatic cellophane wrapping machine made by Packaging Machinery Co., Springfield, Mass. Practically never used. Set to wrap old style gelatine dessert box 2 13/16 x 1 3/8 x 3 3/8. Can be made to wrap smaller sizes than this. Will sacrifice. Reply Senn Products Corporation, 46-81 Metropolitan Avenue, Brooklyn, New York.

WANTED MANAGER PACKAGING ENGINEERING DEPARTMENT. If you are experienced in the design and engineering of packages for all kinds and types of merchandise from china and glassware to radios and furniture and are also familiar with department store merchandise wrapping methods, we should like to have you write us. The position we have to fill involves the sending of several millions of dollars in packaging and wrapping materials and requires the services of a seasoned executive with the necessary engineering training, technical experience, and creative ability. The right person must also have a strong sales personality to gain cooperation from our own buyers and from the factories who supply us with merchandise in the acceptance of new designs, materials and packaging methods. In your letter, please give all pertinent facts such as age, education, health record, work history, number and type of dependents, salaries earned and expected. If possible include samples of work and your photo or snapshot (not returnable). Ours is a nationwide general merchandising concern doing also some export business. Headquarters are in Chicago. Convenient interview will be arranged for applicants whose letters indicate they are qualified. Reply Box 180, Modern Packaging.

$64 QUESTIONS
(& Answers)

Each month, starting with April, Modern Packaging has been carrying the Questions and Answers page, conducted by C. A. Southwick, Jr., Technical Editor. Each month Mr. Southwick answers various questions (see page 82), each of which is worth a good deal more than $64 to the questioner. All subscribers are welcome to use this service, which provides the advice of one of the country's leading packaging technicians without charge. This is only one of the benefits of subscribing to Modern Packaging.

Subscriptions are $5 *For One Year (12 Issues)*
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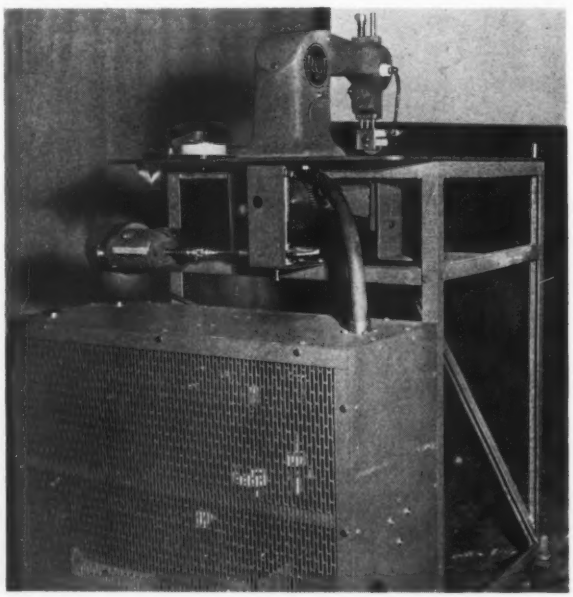
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Breskin Publishing Corporation
122 East 42nd Street New York, 17, N. Y.

Sealing by electronics

(*Continued from page 78*) these wheels in much the same manner as cloth goes through a sewing machine but instead of stitching a seam the material is fused together. There is no reason, RCA engineers believe, why the power cannot be equally effective passing between a pair of metal jaws or clamps such as are used on the ordinary heat-sealing machine, thus permitting perfect control of the time element. It is believed that there may be some considerable advance in the accuracy of temperature control with radio frequency power, and that the time and pressure elements which are largely a matter of mechanics can be regulated as independent functions. In other words, because of the nature of radio frequency power the temperature factor is uniform and not subject to fluctuations due to room conditions, state of the material or amount of work the machine has done.

Not all materials can be heat sealed by this method. Prime requirement is that the substance must be dielectric or nonconductive. Rubber hydrochloride sheeting by this method forms what appears to be an almost perfect seal. On the other hand, metal foil, being a conductor of electricity, is not in the slightest degree affected even when coated with heat-sealing compound. Coated glassine and coated vegetable parchment both appear to seal quite effectively, whereas cellophane and waxed papers are not so successful. Apparently the moisture content must be evaporated, so it is quite possible regulation of the time element may perfect a seal for moisture-content materials. Waxes seem to melt without fusing, but if the resins are thermosetting or thermoplastic they will weld.

It is the announced intention of the manufacturer to place this development at the disposal of all industries where the required priorities may be obtained. Manufactured now on a limited scale, the cost is, of course, higher than it will be later when full production is attained. That, however, is not expected except as a post-war development. Meanwhile it will be the RCA policy to cooperate with manufacturers who may have possible applications. In the packaging field this, of course, is of most obvious interest to makers of standard types of heat-sealing equipment.



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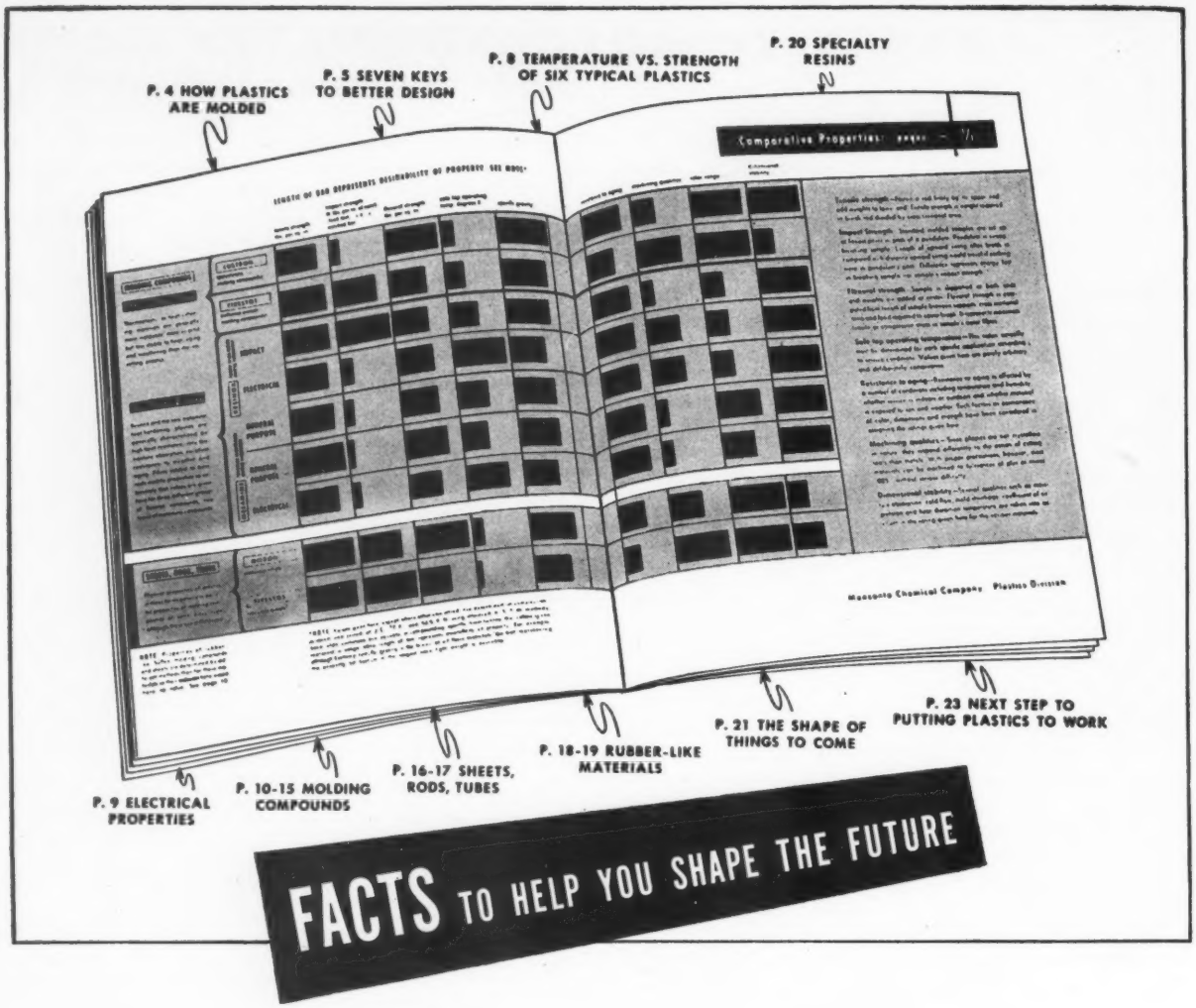
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THERE is little doubt that plastics are due for even more important roles in postwar packaging than they played before Pearl Harbor.

A greater variety of different plastics will undoubtedly be used for packaging.

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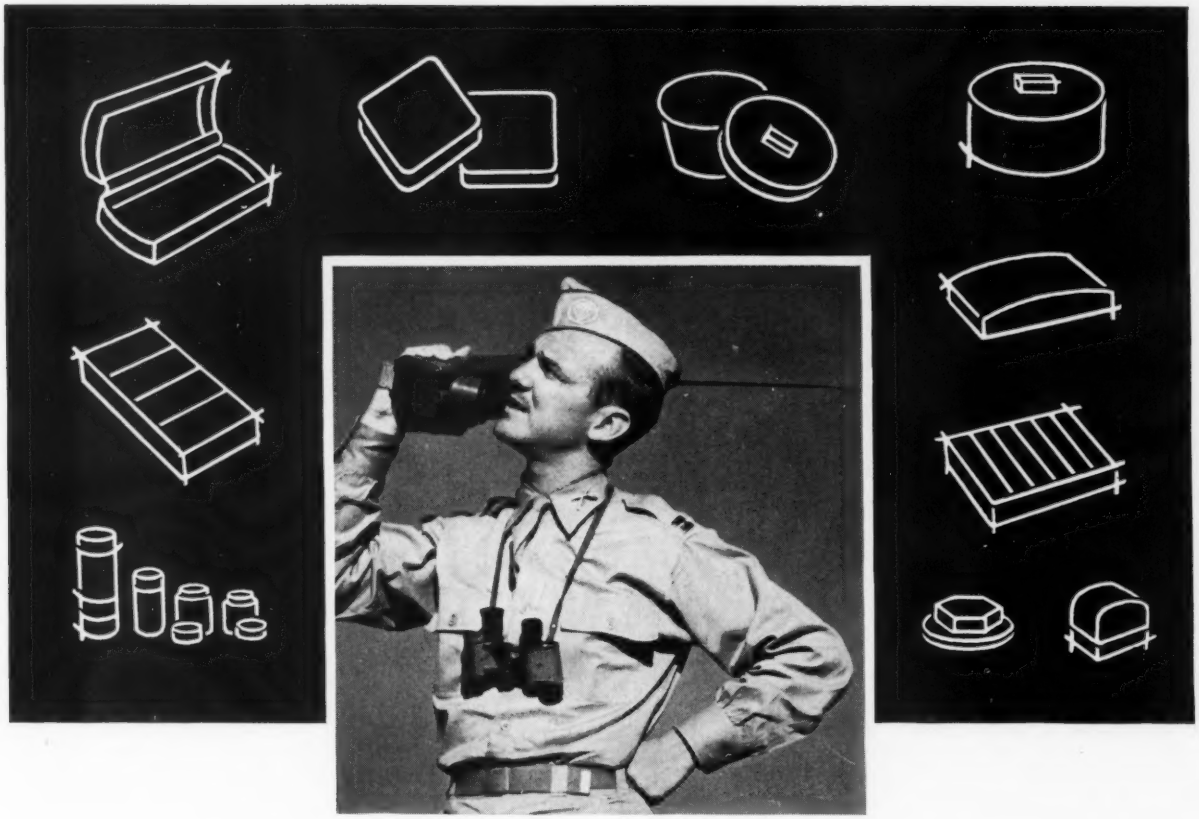
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The "Handy-Talkie" reports on Post-War Packaging!

CERTAINLY the "Handy-Talkie" demonstrates America's ability to devise first class instruments of modern war.

You can think of it as a very neat job of packaging —the portable radio (2-way communication) in battle-dress. As such, it points up the versatility of Durez plastics. They give this machine's housing vital characteristics: High impact strength, durability, high dielectric strength, resistance to mild acids, alkalis and water. Here is utility . . . *plus.*

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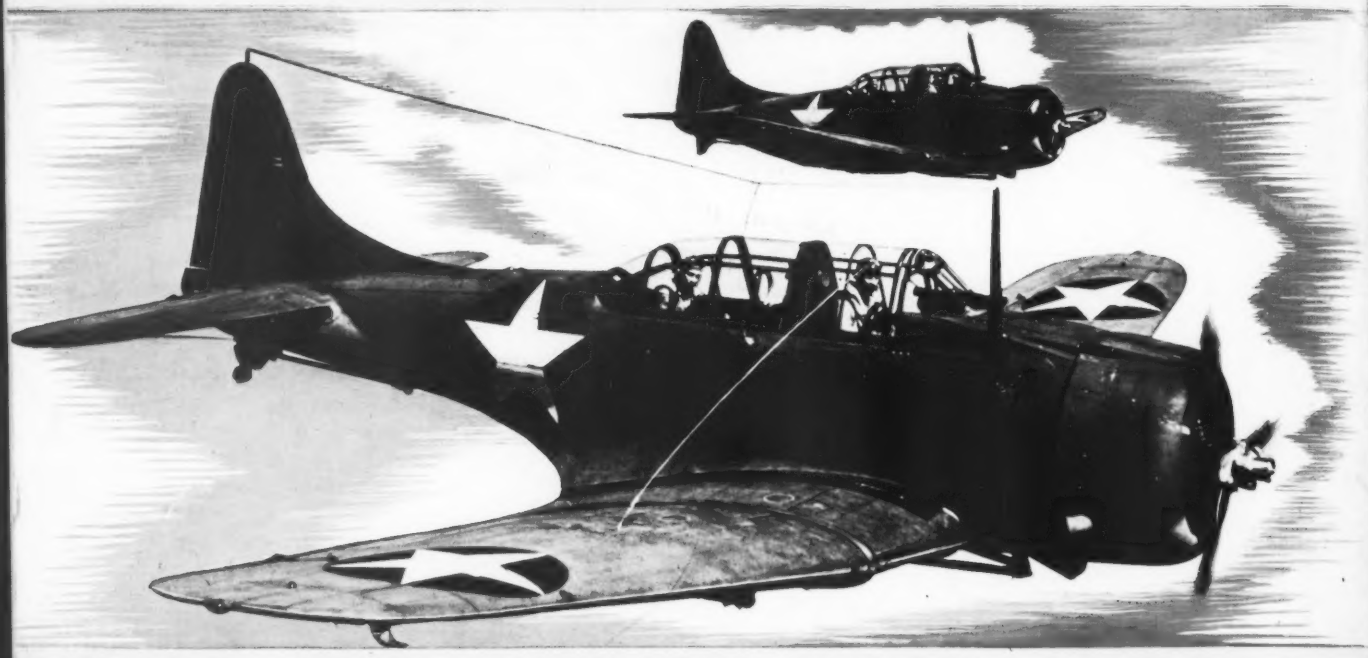
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